PS

THE PREVENTIVE MAINTENANCE MONTHLY

Issue 32
1955 Series

"A STITCH IN TIME SAVES

You know how it is with your pants—if you don't fix a little hole with one stitch today, tomorrow you may wind up with the whole blue-eyed world looking in.

And it's the same way with the "stitch-in-time" work you do on your weapon, tank, truck or whatever you've got.

A little fixing today, some lube, cleaning, care, adjusting, careful operation

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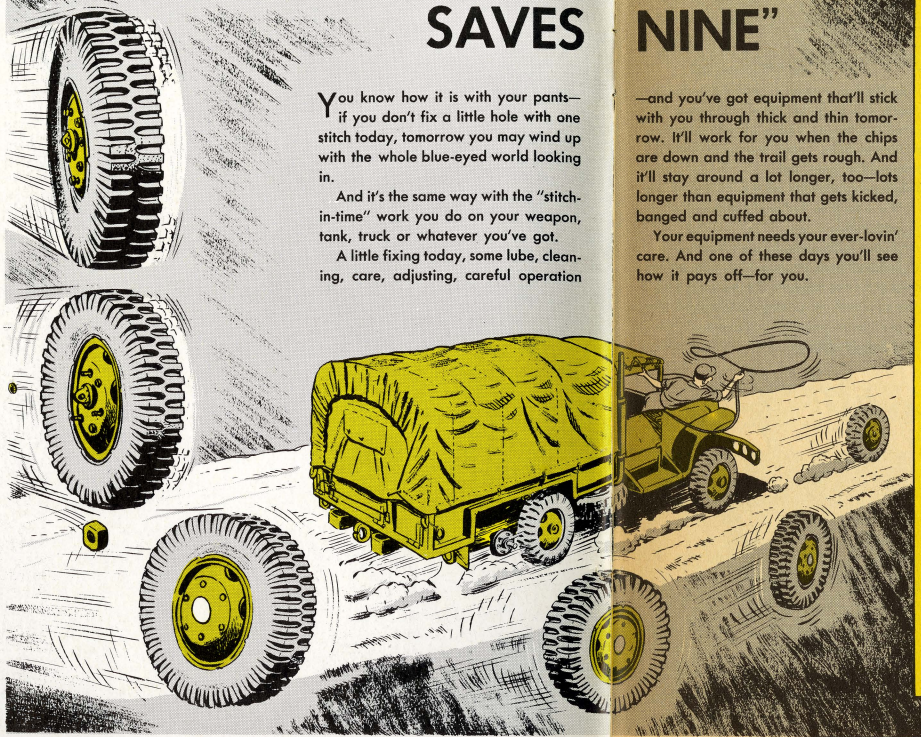
Your equipment needs your ever-lovin' care. And one of these days you'll see how it pays off—for you.



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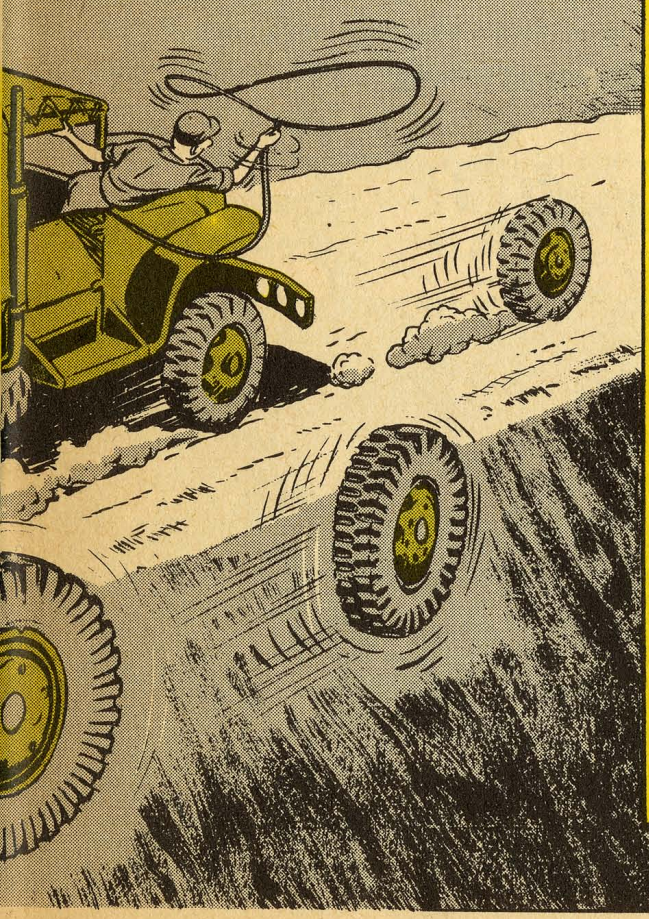

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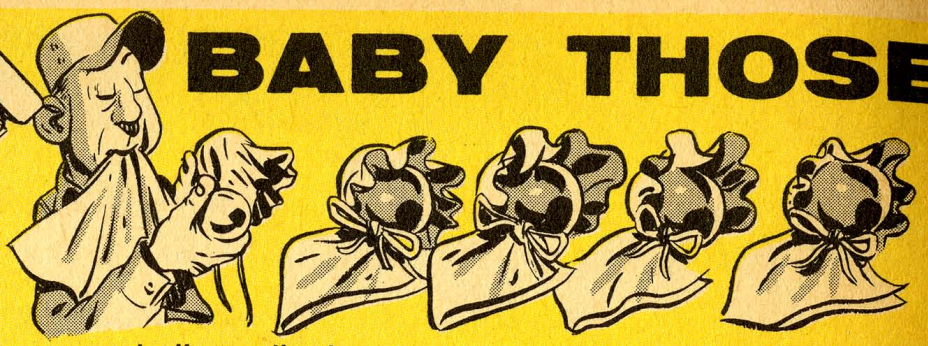
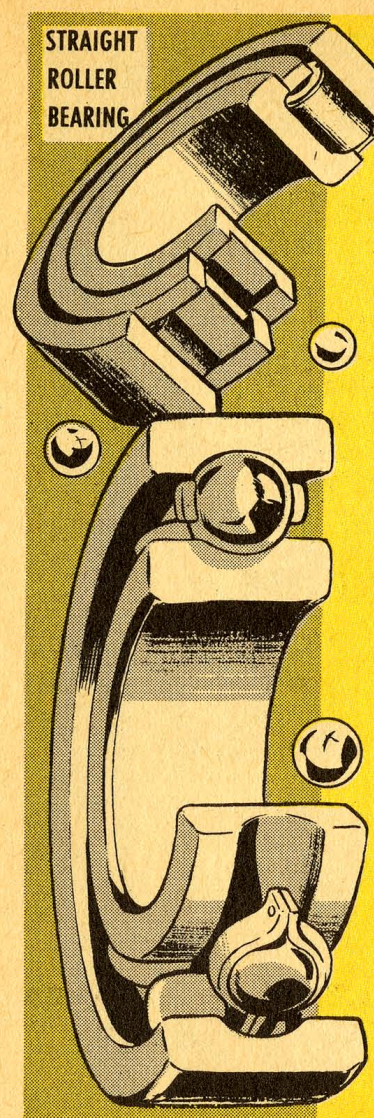
BABY THOSE



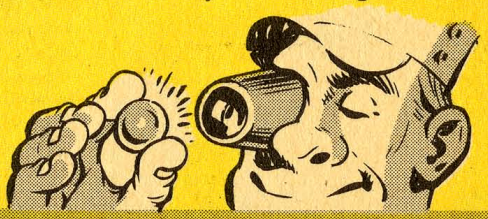


A ball or roller bearing is a carefully designed and finely built machine. Its parts are highly finished and accurately fitted to the last detail just like an expensive watch, but it's a rugged machine, built to take heavy loads. Your trucks, tanks, guns roll on these little gimmicks.

As rugged as it is, a small amount of dirt, or the wrong kind of handling, will cause it to fail and maybe result in serious damage to other parts.

Unfortunately—and strangely enough—the most natural thing a fella will do in handling a bearing is usually wrong. How many times have you seen a guy pull a bearing out of a job and start spinning it with his greasy dirty hands? Like a kid with a top.

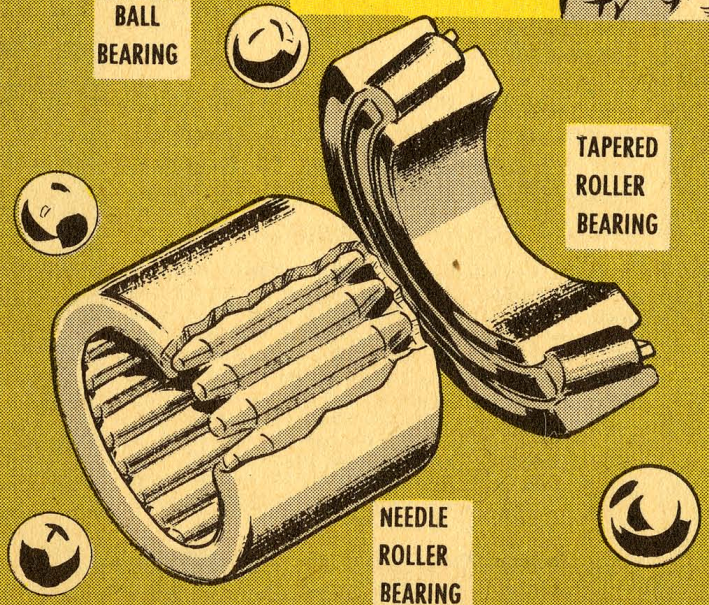
Then he feels it and says it's "rough", and chucks it on the junk pile.



BALL BEARING

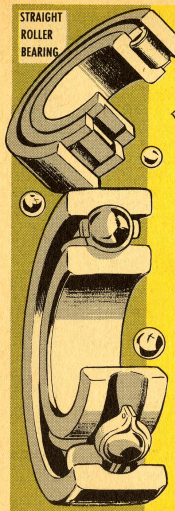
TAPERED ROLLER BEARING

NEEDLE ROLLER BEARING



DON'T SPIN BEARING BEFORE CLEANING, DIRT CAN CAUSE SERIOUS SCRATCHING.

BABY THOSE BEARINGS



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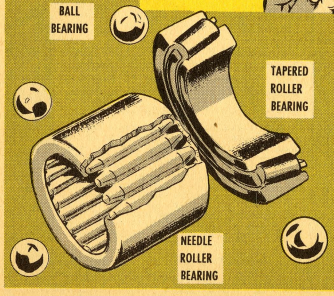


DON'T SPIN BEARING BEFORE CLEANING, DIRT CAN CAUSE SERIOUS SCRATCHING.

That bearing never got the benefit of the doubt. Who knows? Maybe a couple of pieces of dirt or cuttings fell into the bearing while the job was underway. In that case, the roughness was probably nothing more or less than a hunk of trash buried in the race.

Before you remove the bearing from a shaft or even turn it, wash the bearing in dry-cleaning solvent. Imbedded dirt is removed from the picture—the bearing gets a square deal.

Dirt in a bearing is poison. Never toss bearings on a dirty bench or floor, intending to clean them later. Or after cleaning—don't lay bearings aside uncovered, feeling that just because they were clean once they'll stay clean.

HOLD CLEAN BEARING LIKE THIS WHEN ROTATING OUTER RING DURING INSPECTION.

CLEANLINESS

WORK WITH CLEAN TOOLS IN CLEAN PLACE ON CLEAN BENCH

USE WOODEN MALLETS OR SOFT BRASS HAMMERS ONLY DIRECTLY ON SHAFT—NOT ON BEARING. NEVER USE DIRTY, BRITTLE, OR CHIPPED TOOLS.

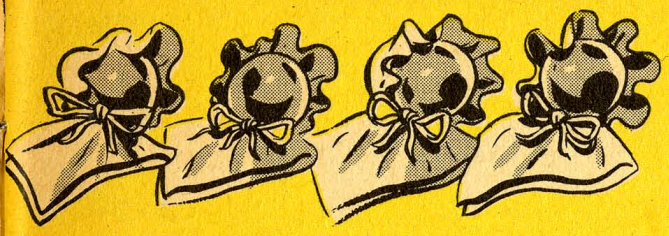
KEEP HANDS CLEAN AND DRY. LAY BEARINGS ON CLEAN PAPER TO PROTECT FROM MOISTURE AND DIRT.

KEEP BEARINGS IN THEIR BOXES. BREAK BOX SEALS JUST BEFORE USING BEARINGS.

NEVER WASH OR WIPE OUT PROTECTIVE LUBE PUT IN BEARINGS BY MANUFACTURER. IF A BEARING MUST BE WIPED USE CLEAN LINT FREE WIPING CLOTHS. TREAT AN OLD BEARING WITH SAME CARE AS A NEW ONE.

MOUNTED BUT NOT ENCLOSED BEARINGS SHOULD BE COVERED WITH CLEAN CLOTH OR PAPER TO KEEP OUT DUST OR DIRT.

BEARINGS



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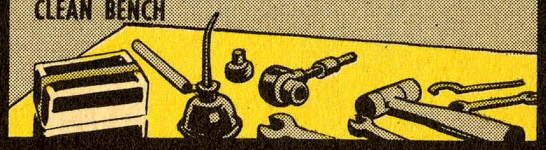

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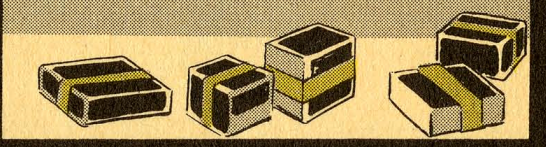

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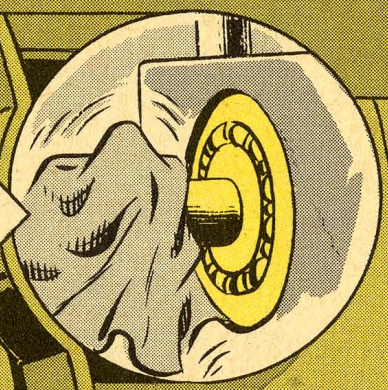
REMOVING BEARINGS

USE AS MUCH CARE REMOVING BEARINGS AS MOUNTING THEM. HERE'S SOME OF THE THINGS TO WATCH FOR:



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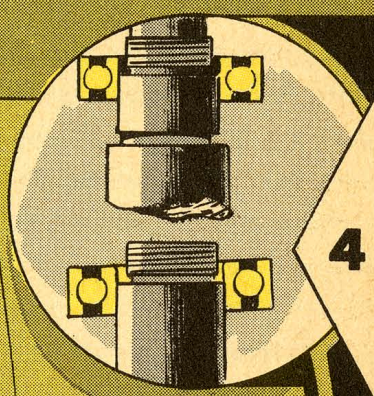
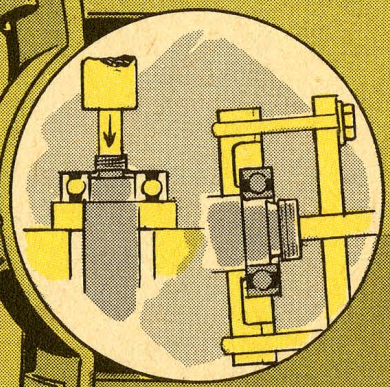
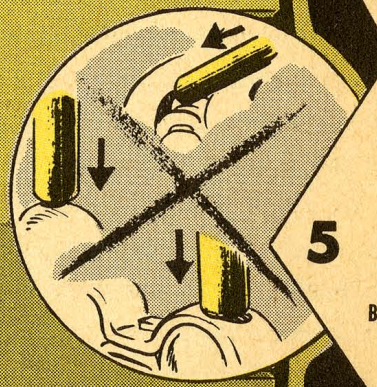


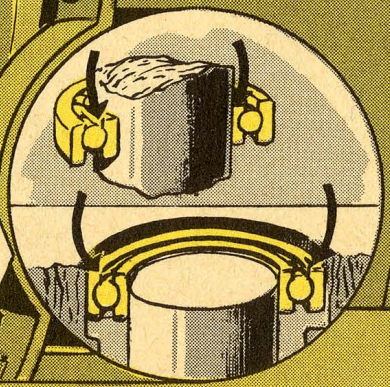
4 PRESS OR PULL STRAIGHT AND SQUARE SO RING WON'T COCK. COCKING MIGHT SCORE SHAFT OR HOUSING AND DAMAGE BEARING. NEVER PRESS OR PULL AGAINST BEARING SHIELD OR SEPARATOR



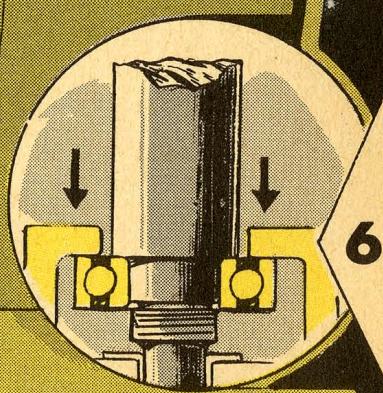
2 NEVER FORCE BEARING FROM SHAFT BY USING PRESSURE AGAINST OUTER RING OR FROM TIGHT FITTING HOUSING BY PRESSURE AGAINST THE INNER RING.



5 NEVER APPLY PRESSURE TO A BEARING RACEWAY, ROLLER, BALL, BALL SEPARATOR OR SNAP RING.



3 REMOVING A BEARING, PULL ONLY THE RING THAT'S TIGHT. REMOVE BEARINGS FROM SHAFTS BY PRESSURE ON INNER RING. THEY'RE REMOVED FROM HOUSING BY APPLYING PRESSURE TO THE OUTER RING.



6 IF YOU CAN'T GET GRIP ON CORRECT RING AND HAVE TO PRESS OR PULL ON OUTER RING, PULL JUST ENOUGH TO CLEAR THE TIGHT RING TO GRIP IT.

SCRATCHES AND NICKS ON BEARING SURFACES SPELL "J-U-N-K P-I-L-E."

REMOVING BEARINGS

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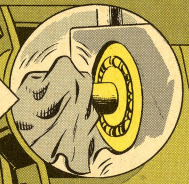

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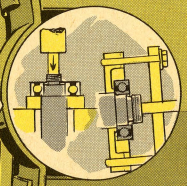

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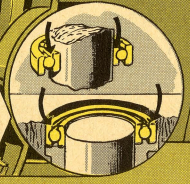

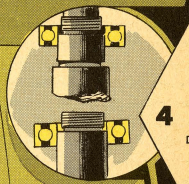

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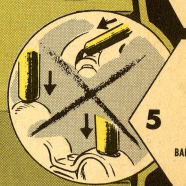

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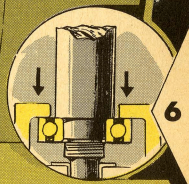

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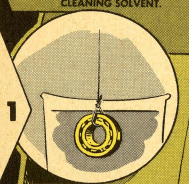
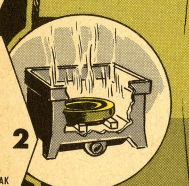
CLEANING

SMALL TANKS AND WIRE BASKETS ARE BEST FOR SOAKING AND WASHING BEARINGS. IF YOU CAN'T GET EITHER OF THEM, USE A CLEAN GREASE OR OIL CAN FILLED WITH DRY-CLEANING SOLVENT.

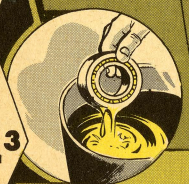
1 HANG BEARING ON WIRE. KEEP IT OFF BOTTOM OF CONTAINER SO IT WON'T PICK UP DIRT. AFTER BEARING HAS SOAKED SLOSH IT AROUND NEAR TOP OF CAN. RINSE IN CLEAN CONTAINER OF CLEAN SOLVENT.

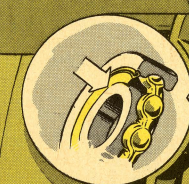


2 IF GREASE IS HARD AND CAN'T BE REMOVED BY SLOSHING AROUND, HEAT SOME #10 ENGINE OIL TO ABOUT 170 F AND SOAK BEARING IN IT. THIS'LL USUALLY DO THE JOB.

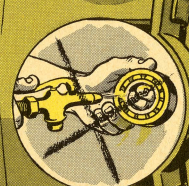


3 TOUGH DEPOSITS OF SLUDGE MAY CALL FOR CARBON TETRACHLORIDE. CARBON TET VAPORIZES FAST, LEAVING BONE-DRY BEARING WIDE OPEN TO RUST. GET OIL ON BEARING RIGHT AFTER SUCH A CLEANING.

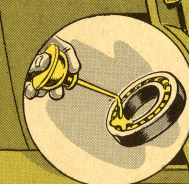




4 BEARINGS WITH SHIELDS OR SEALS ON BOTH SIDES SHOULD NOT BE WASHED. WIPE THEM OFF TO KEEP DIRT FROM WORKING INSIDE.



5 NEVER USE AIR HOSE TO BLOW OUT OLD GREASE OR SOLVENTS. THERE'S NO BETTER WAY TO SCRATCH OR SCORE THE BALLS AND RACE THAN BY SPINNING A DRY BEARING.



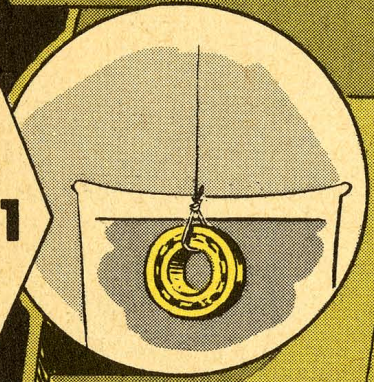
6 AFTER BEARINGS ARE CLEANED OF DIRT OR MOISTURE GIVE THEM A SQUIRT OF OIL BEFORE TURNING THEM 'N YOUR HANDS TO CHECK FOR ROUGHNESS.

IF YOU HAVE NOTHING BETTER AT HAND, WRAP BEARINGS—ON SHAFTS OR UNATTACHED—IN CLEAN NEWSPAPER UNTIL YOU'RE READY FOR THEM.

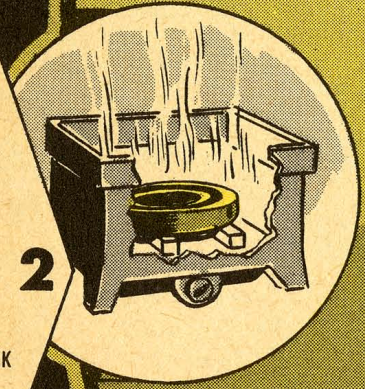
CLEANING

SMALL TANKS AND WIRE BASKETS ARE BEST FOR SOAKING AND WASHING BEARINGS. IF YOU CAN'T GET EITHER OF THEM, USE A CLEAN GREASE OR OIL CAN FILLED WITH DRY-CLEANING SOLVENT.

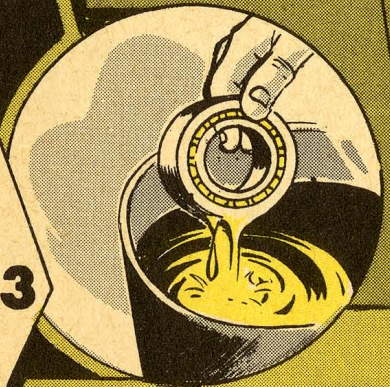
1 HANG BEARING ON WIRE. KEEP IT OFF BOTTOM OF CONTAINER SO IT WON'T PICK UP DIRT. AFTER BEARING HAS SOAKED SLOSH IT AROUND NEAR TOP OF CAN. RINSE IN CLEAN CONTAINER OF CLEAN SOLVENT.



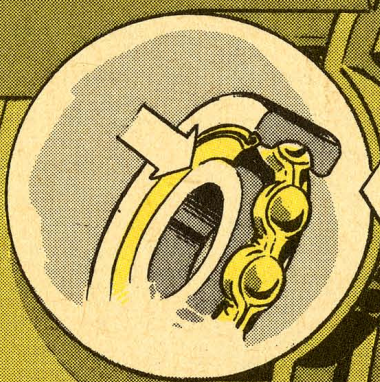
2 IF GREASE IS HARD AND CAN'T BE REMOVED BY SLOSHING AROUND, HEAT SOME #10 ENGINE OIL TO ABOUT 170 F AND SOAK BEARING IN IT. THIS'LL USUALLY DO THE JOB.



3 TOUGH DEPOSITS OF SLUDGE MAY CALL FOR CARBON TETRACHLORIDE. CARBON TET VAPORIZES FAST, LEAVING BONE-DRY BEARING WIDE OPEN TO RUST. GET OIL ON BEARING RIGHT AFTER SUCH A CLEANING.



4 BEARINGS WITH SHIELDS OR SEALS ON BOTH SIDES SHOULD NOT BE WASHED. WIPE THEM OFF TO KEEP DIRT FROM WORKING INSIDE.



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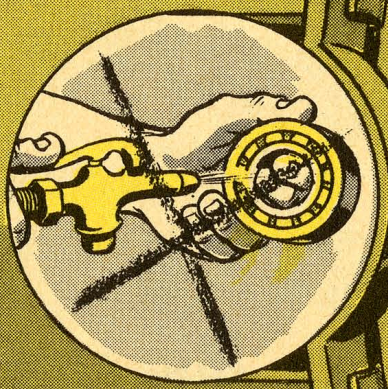

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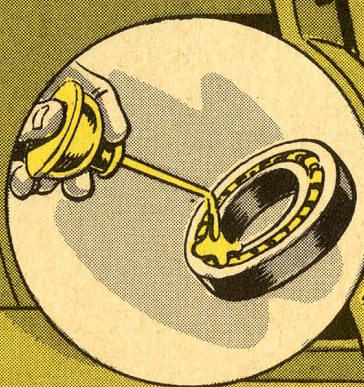

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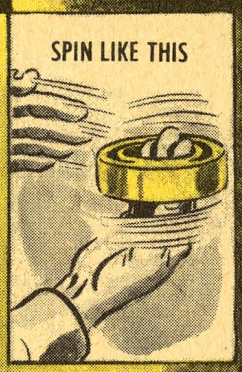
INSPECTION

After a bearing is washed clean, you've got to inspect it to find out if it's good enough to be used.

So much depends on "feel" when judging a bearing that some fellas squirm while deciding. But a little study and reason makes every man his own expert.



WHEN THE OUTER RING IS SPUN, IF IT'S GOT DIRT OR GRIT, IT WON'T COAST TO A STOP, BUT STOP FAST LIKE. CLEAN IT AND CHECK AGAIN.

CHECK FOR BROKEN, CRACKED OR SPLIT RINGS.

CHECK FOR DISCOLORATION (BROWNISH-BLUE OR BLUE-BLACK) CAUSED BY OVER HEATING.

LOOK OUT FOR DENTED SEALS, SHIELDS OR RINGS.

WATCH FOR BROKEN BALLS OR SEPARATORS.

ON ROLLER BEARINGS CHECK:

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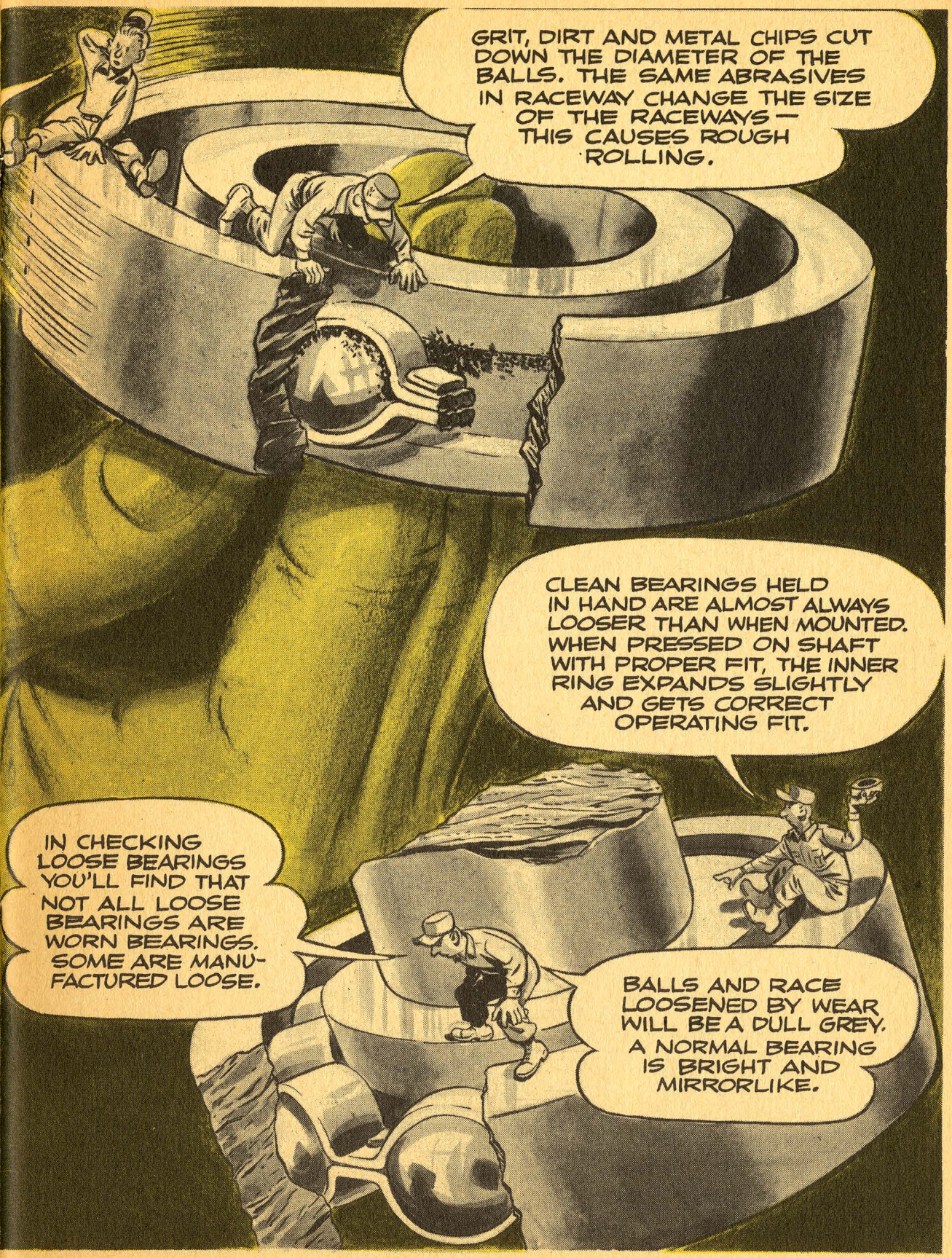
GRIT, DIRT AND METAL CHIPS CUT DOWN THE DIAMETER OF THE BALLS. THE SAME ABRASIVES IN RACEWAY CHANGE THE SIZE OF THE RACEWAYS — THIS CAUSES ROUGH ROLLING.

CLEAN BEARINGS HELD IN HAND ARE ALMOST ALWAYS LOOSER THAN WHEN MOUNTED. WHEN PRESSED ON SHAFT WITH PROPER FIT, THE INNER RING EXPANDS SLIGHTLY AND GETS CORRECT OPERATING FIT.

IN CHECKING LOOSE BEARINGS YOU'LL FIND THAT NOT ALL LOOSE BEARINGS ARE WORN BEARINGS. SOME ARE MANUFACTURED LOOSE.

BALLS AND RACE LOOSENED BY WEAR WILL BE A DULL GREY. A NORMAL BEARING IS BRIGHT AND MIRRORLIKE.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KEEP YOUR LUBRICANTS IN CLEAN AND COVERED CONTAINERS.
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LUBE BEARINGS ACCORDING TO INSTRUCTIONS IN TECH MANUAL OR LUBE ORDER COVERING EQUIPMENT ON WHICH YOU'RE WORKING. USE ONLY WHAT LUBE INSTRUCTIONS CALL FOR.
AVOID OVERLUBING
WHEN PACKING A BEARING WITH GREASE GET GREASE BETWEEN BALLS OR ROLLERS BY KNEADING INTO ALL OPEN SPACES WITH THE HAND.
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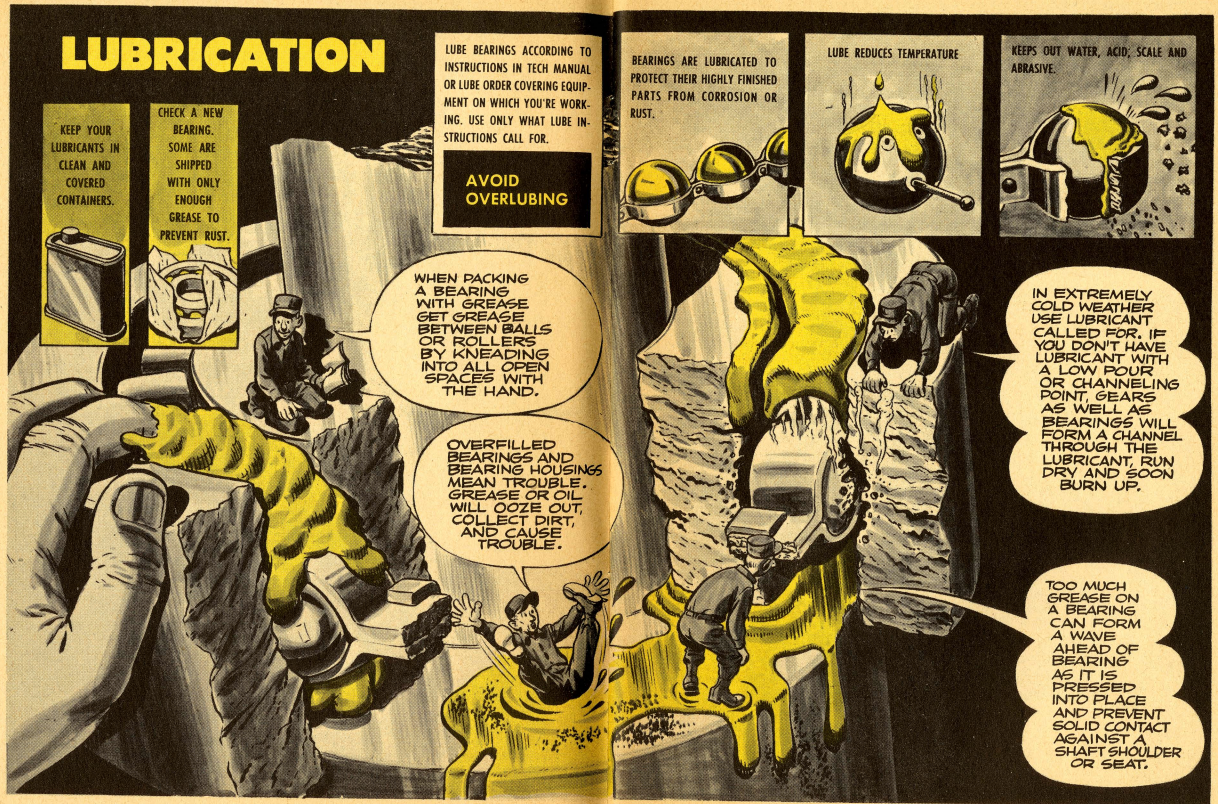
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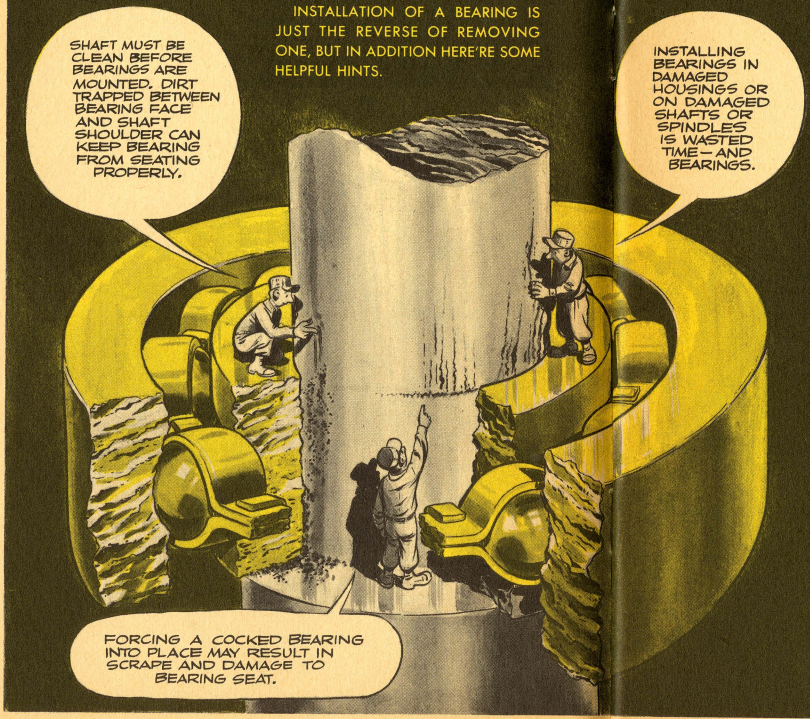
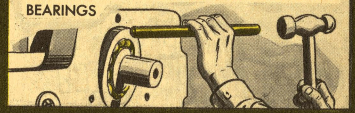


DON'T ALLOW AIR HOSE AROUND WHILE BEARINGS ARE BEING INSTALLED, EVEN IF BEARINGS ARE COVERED WITH CLOTH OR PAPER. FINE PARTICLES BLOWN INTO AIR CAN GET INTO BEARINGS.

DRIFT PINS FOR LOCATING AND SQUARING UP BEARINGS SHOULD BE OF UNHARDENED DRILL ROD OR COLD ROLLED STOCK WITH EDGES WELL ROUNDED. HARDENED DRIFT PIN WILL DAMAGE RING SURFACES. COPPER OR BRASS MIGHT FLAKE AND GET INTO BEARINGS



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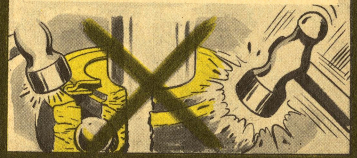

INSTALLING BEARINGS IN DAMAGED HOUSINGS OR ON DAMAGED SHAFTS OR SPINDLES IS WASTED TIME—AND BEARINGS.

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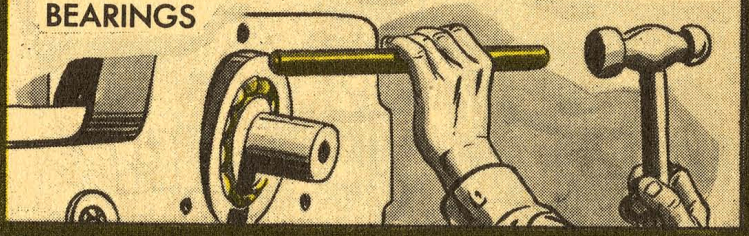

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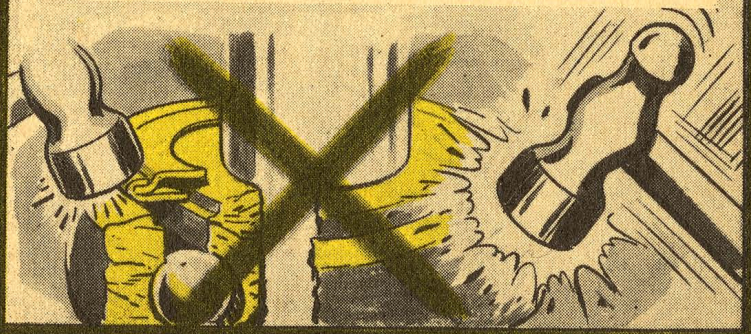
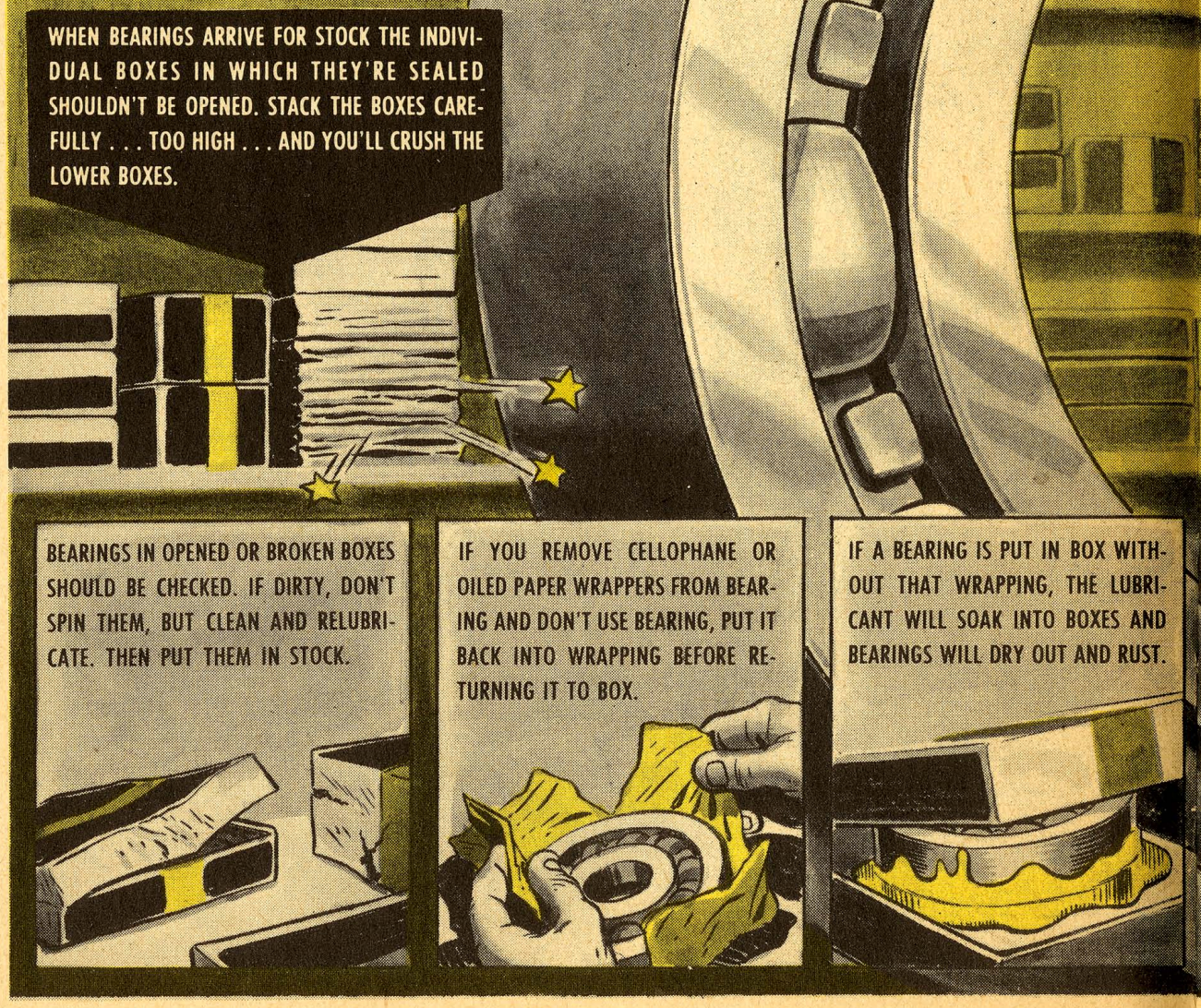


STORAGE

Bearing manufacturers take the strictest care at all times to keep dirt of any kind from getting into bearings. They have oil filtering systems, dust free rooms. They lube and box them immediately so's they're perfectly clean when you get them. You should use precautionary measures in the stock room, too.

Bearings should be kept in a stock room that doesn't get too hot and where there isn't too much moisture. In a stock room that is humid or damp the possibility of rusting is great. When kept in too warm a place, the lubricant coating the bearings can become fluid and work away from some of the surfaces. That way they're really open to rust when it's damp.



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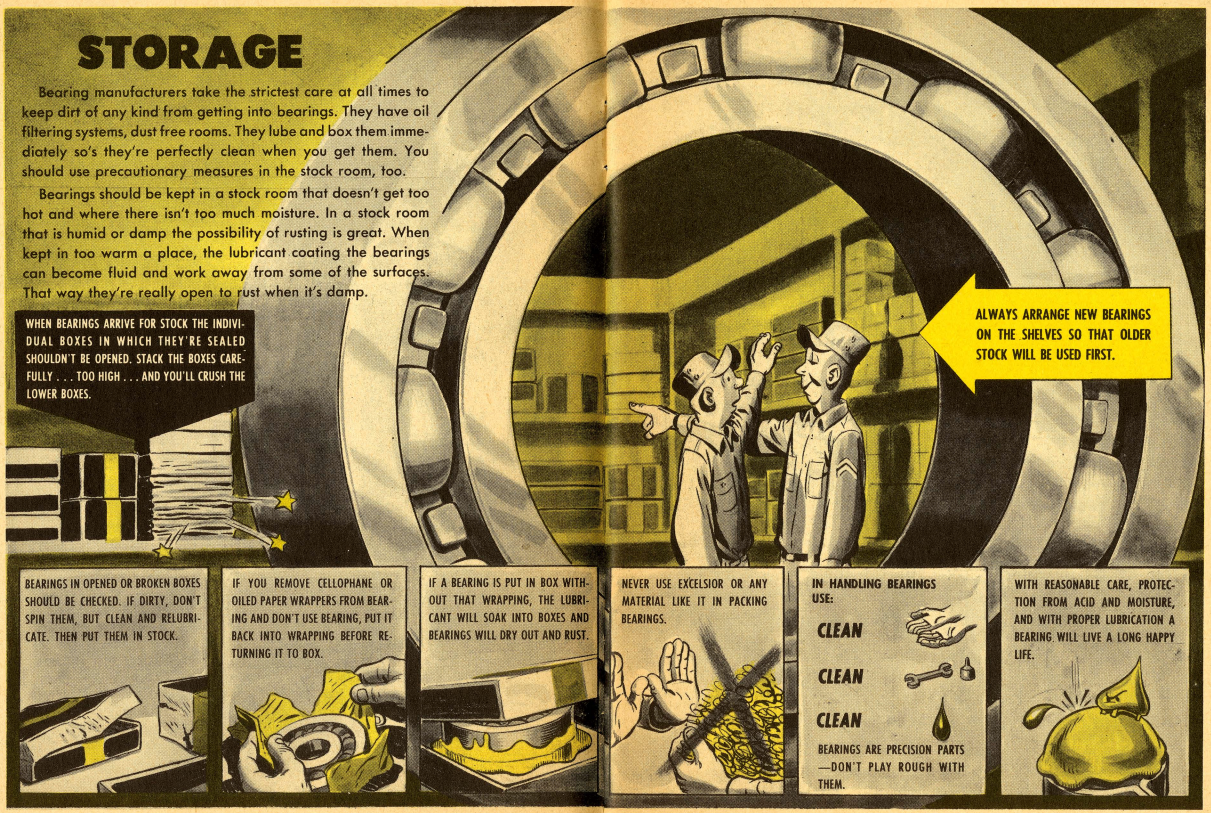
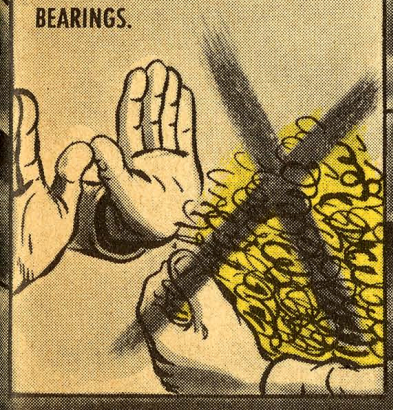


ALWAYS ARRANGE NEW BEARINGS ON THE SHELVES SO THAT OLDER STOCK WILL BE USED FIRST.

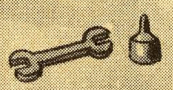
NEVER USE EXCELSIOR OR ANY MATERIAL LIKE IT IN PACKING BEARINGS.



IN HANDLING BEARINGS USE:

CLEAN

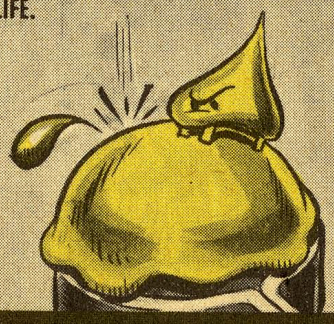
CLEAN

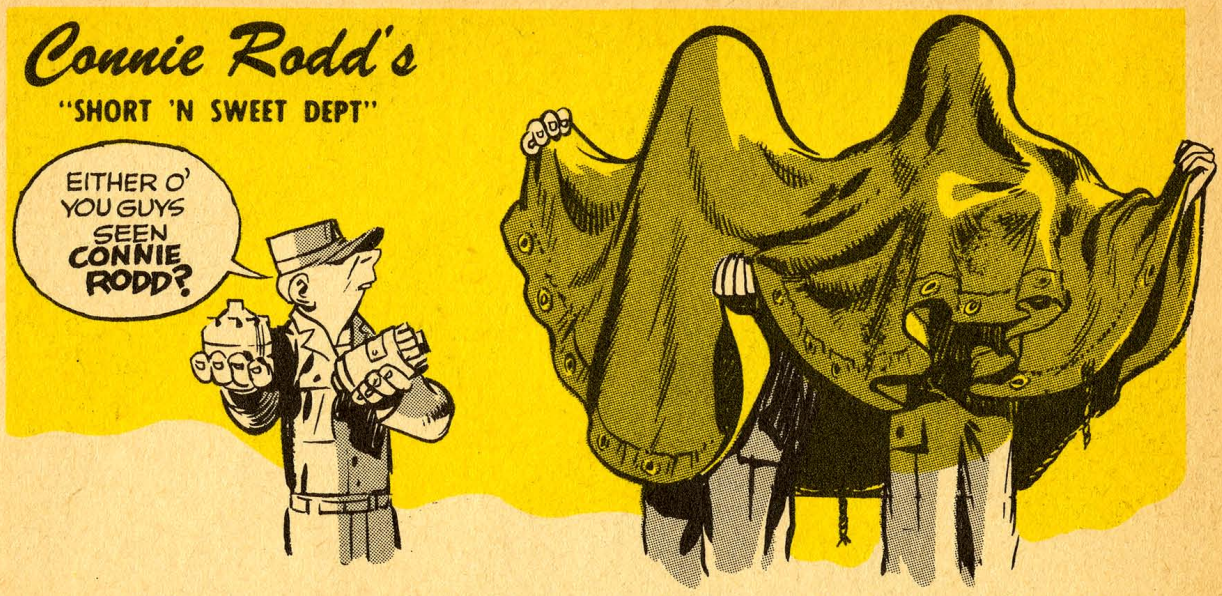


CLEAN

BEARINGS ARE PRECISION PARTS —DON'T PLAY ROUGH WITH THEM.

WITH REASONABLE CARE, PROTECTION FROM ACID AND MOISTURE, AND WITH PROPER LUBRICATION A BEARING WILL LIVE A LONG HAPPY LIFE.





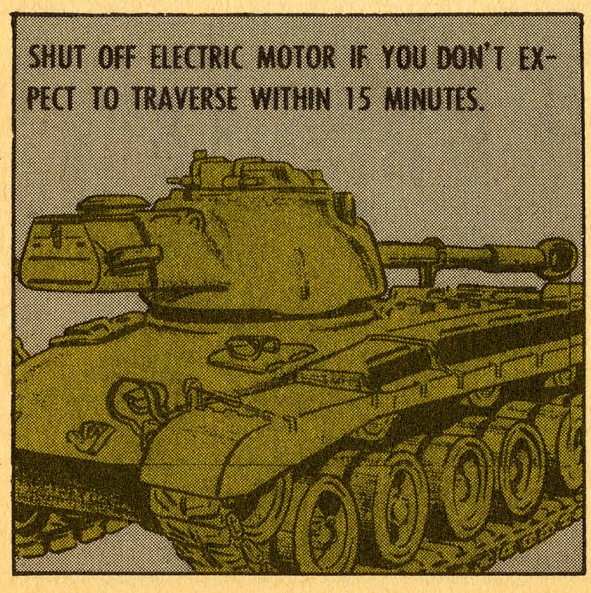
Turret motors

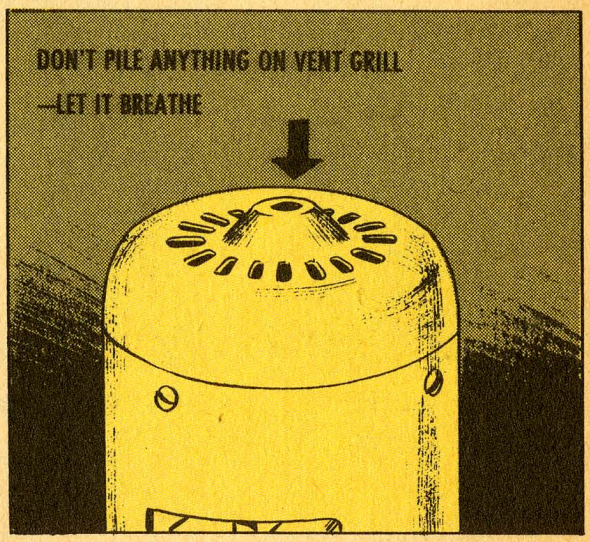
Been wondering whether you ought leave your Medium tank's electric turret-motor running all the time the gun tube's out of travel lock and your buggy's in operation?

Good question. There've been several failures reported on these motors when they're left running very long.

Shouldn't happen. But if it does happen in your outfit, be sure to shoot through the UER's. And don't forget to include serial numbers of the faulty motors.

Meantime, just good common sense is your best guide for how long to run the motor. If y'expect to be twirling the turret every two or three minutes—





leave it on. If y'don't expect to traverse for 15 minutes or more—shut it off. If in doubt — when hunting, for instance — leave 'er go.

And—to keep it running cool as possible—make sure the vent grill is kept clean of jackets, canvas, anything that'd restrict its free end easy breathing.

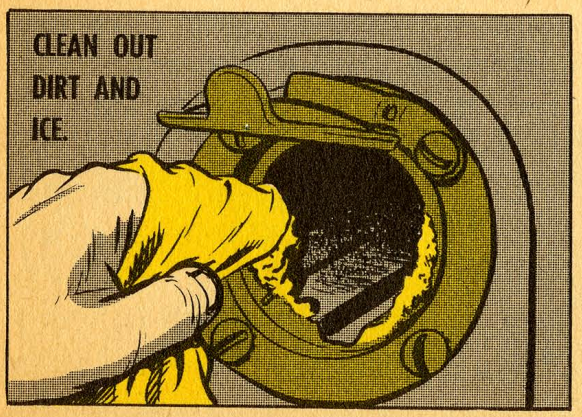
Distributors differ

Every so often you hear about an M35 or an M41 truck that has hard-to-find ignition troubles. Everything looks perfect, but she won't run right. Could be somebody has put the wrong distributor into her by mistake. These trucks all use Delco-Remy distributors, and look enough alike that they can be confused.

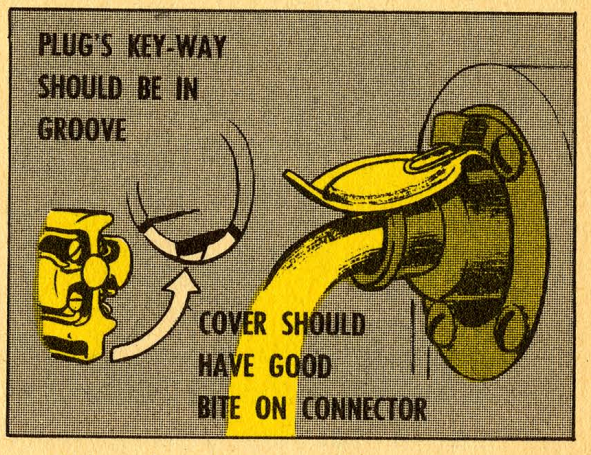
It helps to remember that:
The M35 uses Delco Model 1111556, (Ord Stock No, G742-7762685)
The M41 uses Delco Model 1111561, (Ord Stock No, G744-7353276)
And these distributors are **not** interchangeable.

Plug for this

Cargo trailer-connection receptacles are on the receiving end for trouble, unless they're clean of dirt and ice. If you let such scum gather in the plug's annular ring, it won't set tight. Some normal vibration, and they'll pop out of their sockets.



Connectors used to be made of die-cast metal. Which made them pretty fragile. But now they're steel and should stand up under normal handling. If any clean, steel ones crack, send in a UER—on the double.



Cleaned and plugged in right, they'll hold their own.

Sure cure for baldness

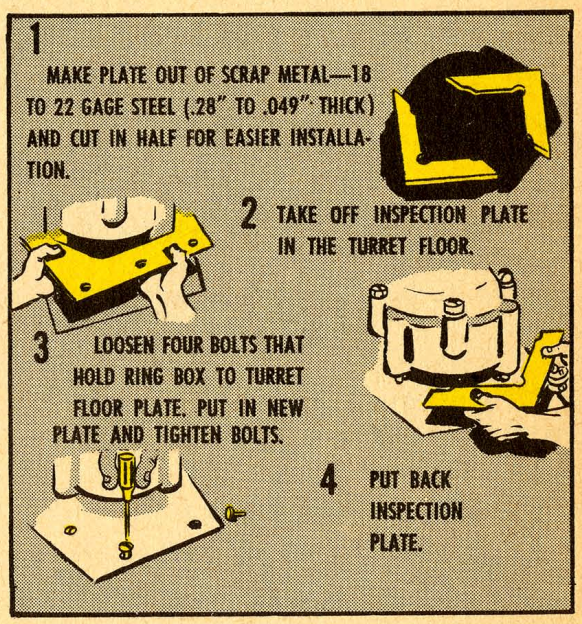
Seems like some trailers and trailer vans with galvanized metal tops are showing up with bald spots because of OD dandruff. This causes the paint to flake and peel off, leaving such an unsightly mess that even your best friend will tell ya'.

The solution, tho, is just a matter of the right solution—in this case phosphoric acid. You use the acid mixed one part to three parts of water to clean the metal before you splash on the primer coat of paint. By the numbers it's this way:

For additional details on painting turn to your technical manual. That's TM 9-2851 on your dial.

models have on the floor below the slip-ring box to keep .30 cal. shells and other uninvited trash from falling thru and wedging between the box and the turret basket floor. Saves a lot of damage to the boxes.

You do it like this:

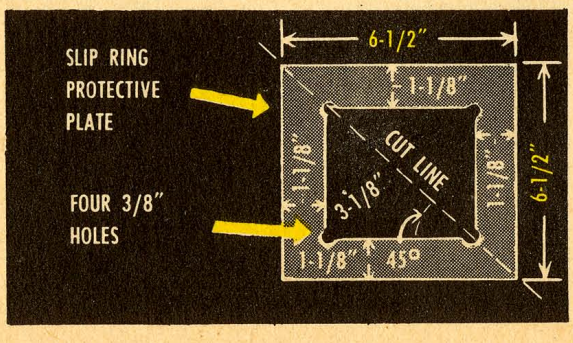


You'll see this information in a directive one of these days.

Watch that hole

Here's something you M41 and M41A1 jockeys can have done to save a lot of wear and tear on the old buggy. (Ordnance Serial Numbers below 3541).

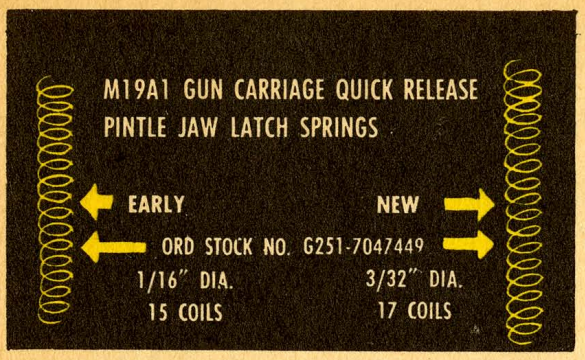
Put a plate similar to the ones the late



Hold your load—

Likely the quick-release pintle on your M19A1 gun carriage came equipped with a jaw latch-spring that's proving a little light for towing chores. To avoid dropping your load in the wrong place at the wrong time, better replace it with the heavier one now available.

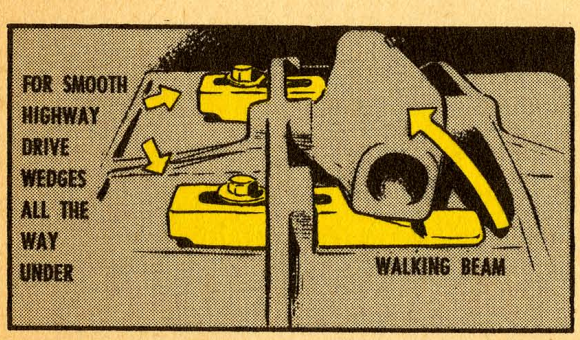
Both springs are listed under Ord Stock No. G251-7047449 — but they can be easily identified. The early job has a wire diameter of 1/16 inch, and 15 active coils; the new one's got a 3/32-in diameter and 17 active coils.



Case y'should prefer a standard pintle (medium duty) to the quick-disconnect set-up, it can be had. Use Ord Stock No. G742-7760103.

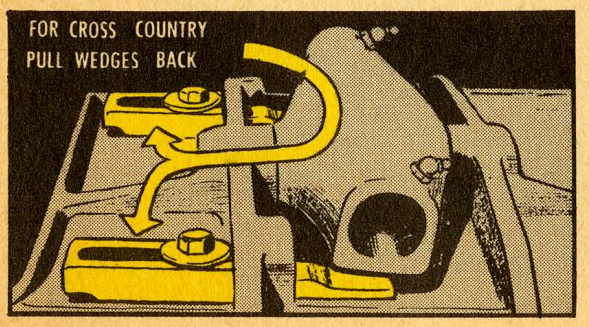
Fifth wheel lock-up

All Ordnance standard fifth wheels, such as those used on the 2-1/2-ton 6x6 and 5-ton 6x6 truck tractor, can be adjusted.



The adjusting is done with a couple of wedges between the subbase and the walking beam.

When you're rolling your rig on the highway, you drive the wedges all the way in under the walking beam. This locks out the side rocking that you don't need on smooth roads.

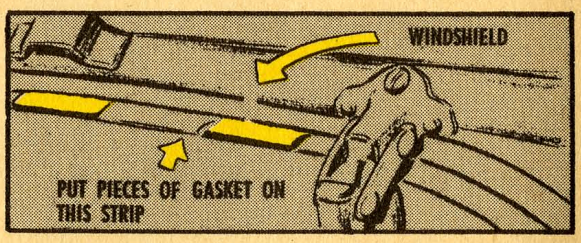


When your job has to go on cross-country hops you pull the wedges back. This lets the vehicle flex and takes a lot of the strain and fatigue away from the trailer pin to keep it from breaking.

Windshield on the loose

A loose windshield that's battered back and forth by the M38's jogging and the whipping of the wind will crack up unless you do something quick. Sometimes the clamp that hooks it to the instrument-panel's windshield-support can be adjusted to tighten it up. If yours does—do.

And when the clamp's reached its end, you can add more adjustments. Just take the clamp off and lengthen the holes right there on the panel, with a rat-tail file. Then screw the clamp back and tighten up.

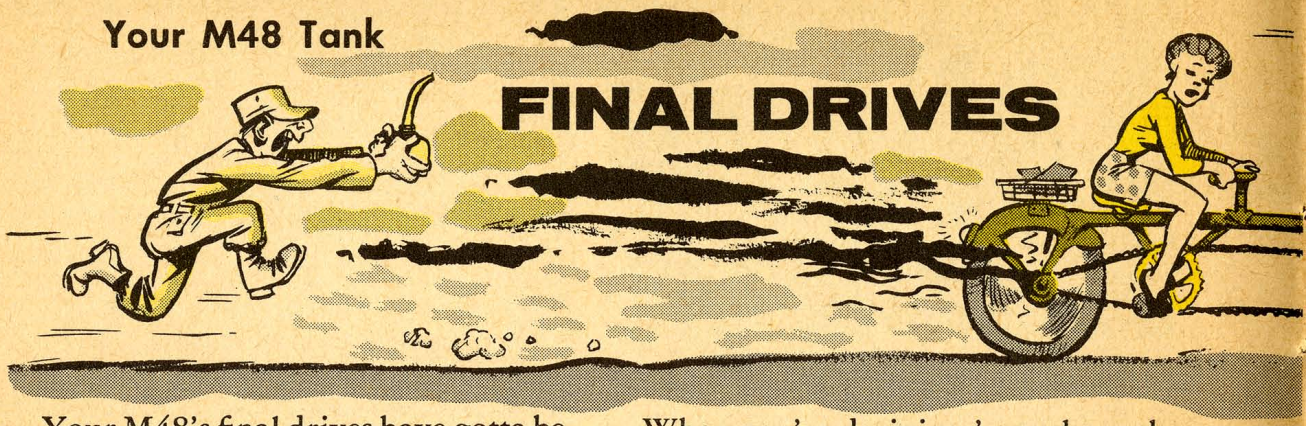


Or, if you can't do that, slip part of an old gasket under the windshield here and there to bolster it up. Cut off the gasket pieces where they stick into the cab for a neat job. Packing the space between the windshield and its support may be all she needs to be well stacked.

Why make a flop of your windshield when it's so easy for it to straighten up and fly right?

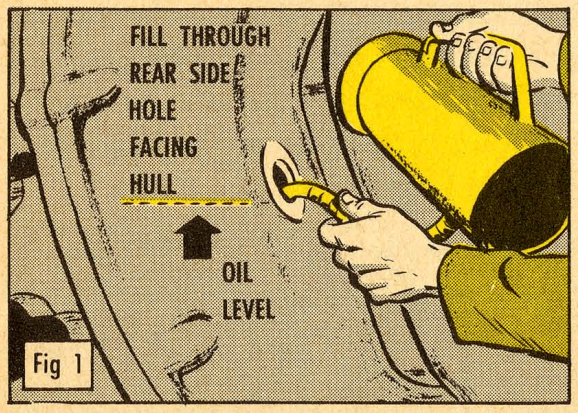
Your M48 Tank

FINAL DRIVES

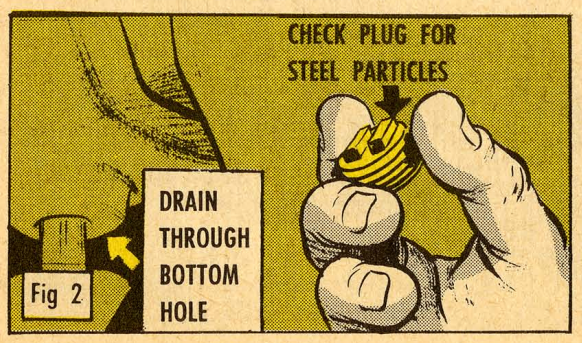


Your M48's final drives have gotta be checked and filled weekly, and before operation. They get the same weight OE as goes in the main engine crankcase.

Y'fill 'em through the rear side hole (Fig 1), facing in toward the hull. After allowed to settle, the oil should be up level with the bottom of the hole—with your dread-naught on level ground, o'course.



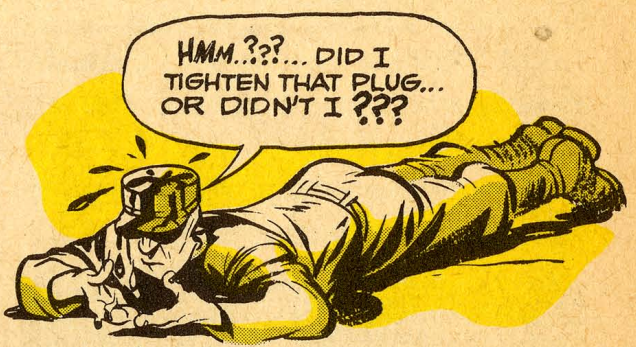
At every other C maintenance service (that's C^2 and C^4) final drives should be drained and refilled.



When you're draining 'em—through the bottom hole (Fig 2)—check the magnetized plug and the oil for steel particles. Any sizable amount of large steel chips'll mean the units better be disassembled and looked into. But finding copper flakes in the oil just shows that the wear-in copper plating on the gear teeth is wearin' in, like it oughtta.

Make ding-dong sure y'get that drain plug back in place—good and snug.

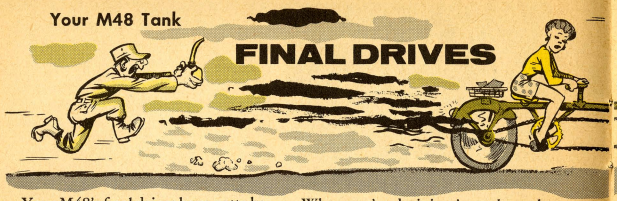
Like's been pointed out before, y'never mix the two halves (carrier and case) between different final drive assemblies. They're mated by the manufacturer and hafta stick together like Tom 'n Jerry. Same goes for the bull

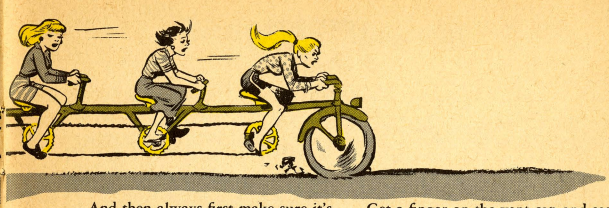


gear and pinion gear. When they gotta be replaced, see that it's done in pairs.

You'll find some seepage around those final drive outer seals. But—don't go having them replaced unless there's excess seepage—or leakage.

FINAL DRIVES





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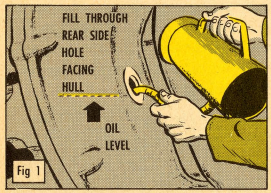

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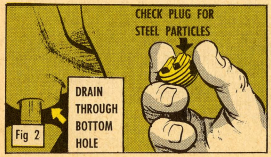

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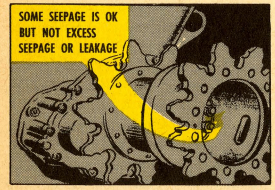
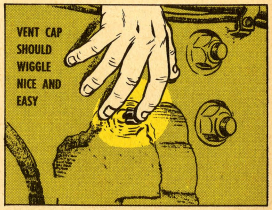
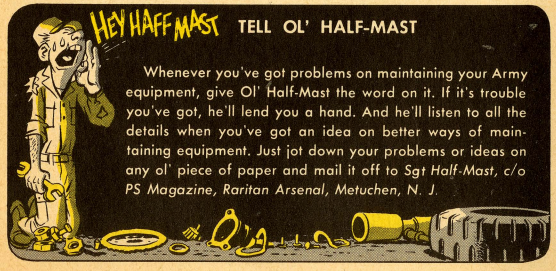


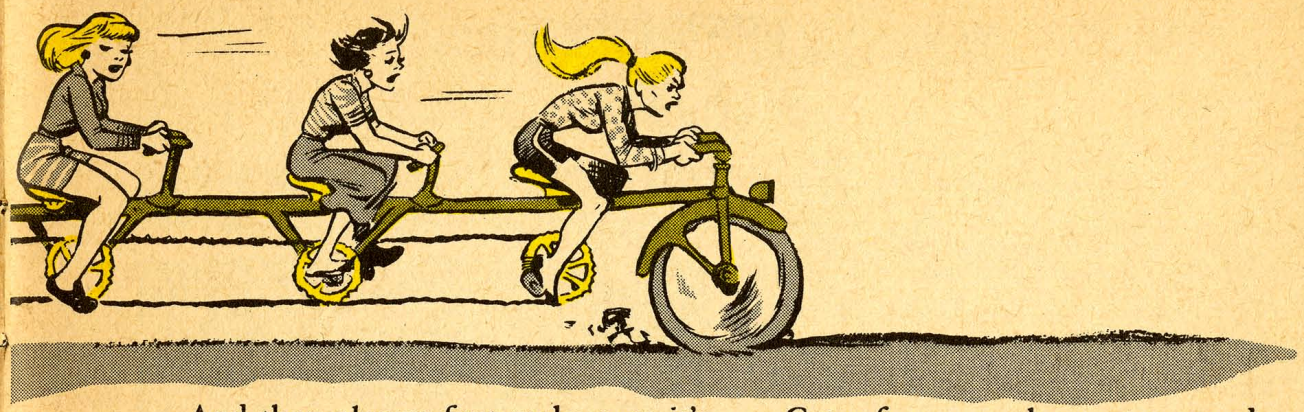
Get a finger on the vent cap and see if it wiggles. It's gotta move free and easy to keep doin' its job—letting air through, keeping dirt out. If it feels rigid, that'll mean it's probably clogged up—and oughtta be cleaned up.



HEY HAFF MAST TELL OL' HALF-MAST



Whenever you've got problems on maintaining your Army equipment, give Ol' Half-Mast the word on it. If it's trouble you've got, he'll lend you a hand. And he'll listen to all the details when you've got an idea on better ways of maintaining equipment. Just jot down your problems or ideas on any ol' piece of paper and mail it off to *Sgt Half-Mast, c/o PS Magazine, Raritan Arsenal, Metuchen, N. J.*



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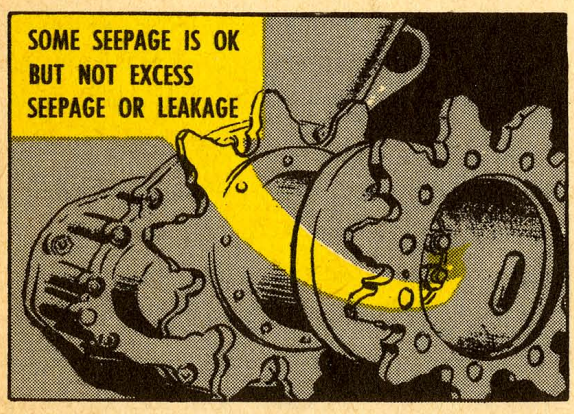

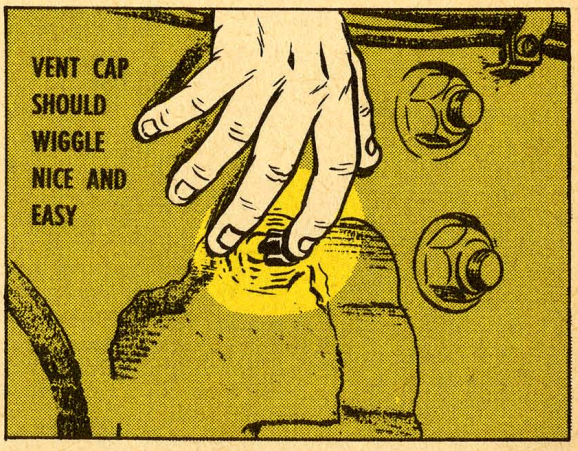

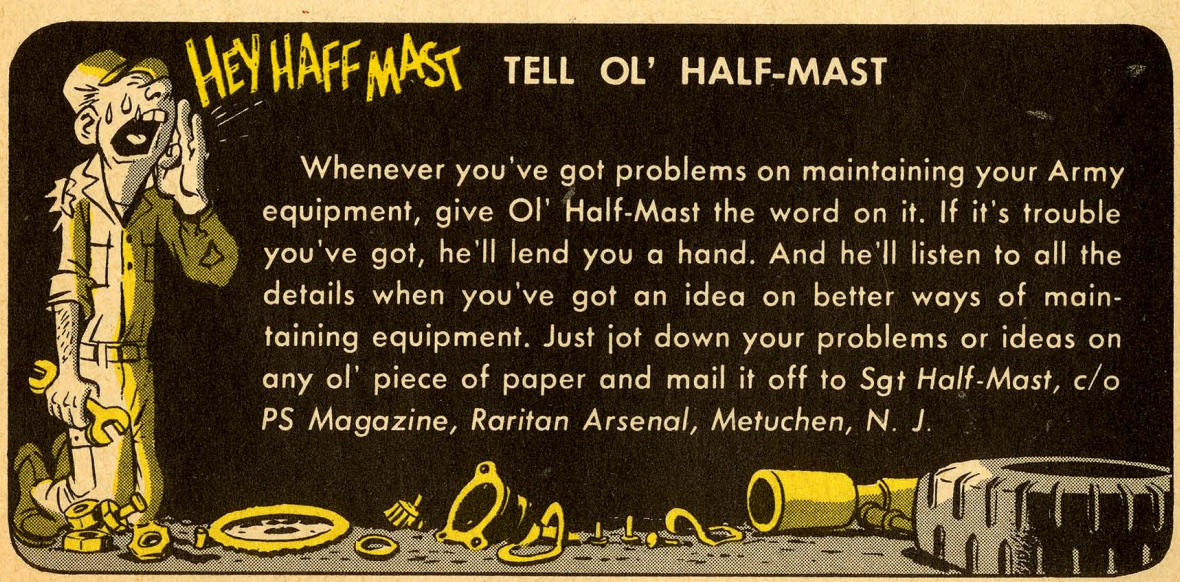

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TENSION, PLEASE—

Dear Half-Mast,

We've had quite a ruckus in our outfit about adjusting track tension on our M48 tanks. Here are a couple of questions we hope you'll be able to clear up for us:

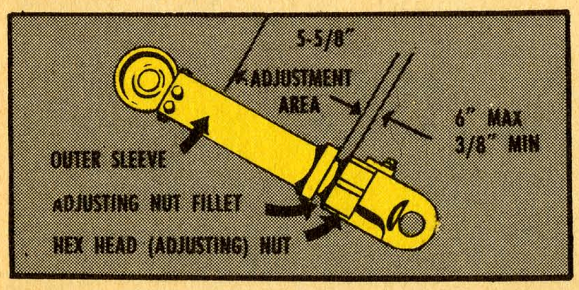
1. What are the adjustment limits on each of the track adjusting links?

2. When a track gets old and stretched sometimes you can't get enough tension by just extending the adjusting link. Can a track block be removed from one side—and not the other—without eventual harm to the suspension? Or leading to one side?

Lt R. A. D.

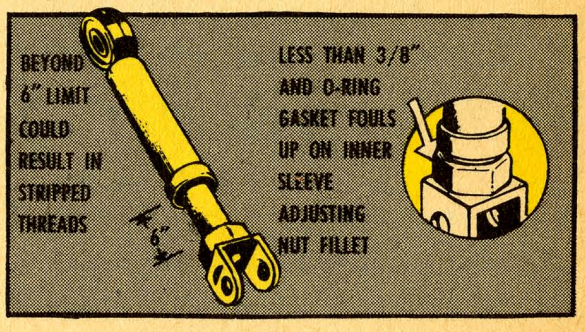
Dear Lt R. A. D.,

Adjustment limits of those links—measured betwen opposing edges of the hex-head (adjusting) nut and the link outer sleeve—are: Maximum, 6 inches; minimum, 3/8 inches.



Stick to these limits and you protect the link assembly—and your suspension. Go out past the 6 inches and you'll likely get stripped threads between the adjusting screw and inner sleeve. Collapse it below 3/8 inch, and the O-ring gasket'll get fouled up on the inner sleeve-adjusting nut fillet.

In overall length, the left-hand link assembly is 3-7/8 inches shorter than the right-hand assembly. But the adjustment limits—and the measurement points—are the same for both sides.



You can take out a track block on just one side OK, without any harm to the suspension. And it shouldn't cause any leading—if the tension on both sides is adjusted properly. It's unequal track tension—not unequal track length—that'll put the drag on one side.

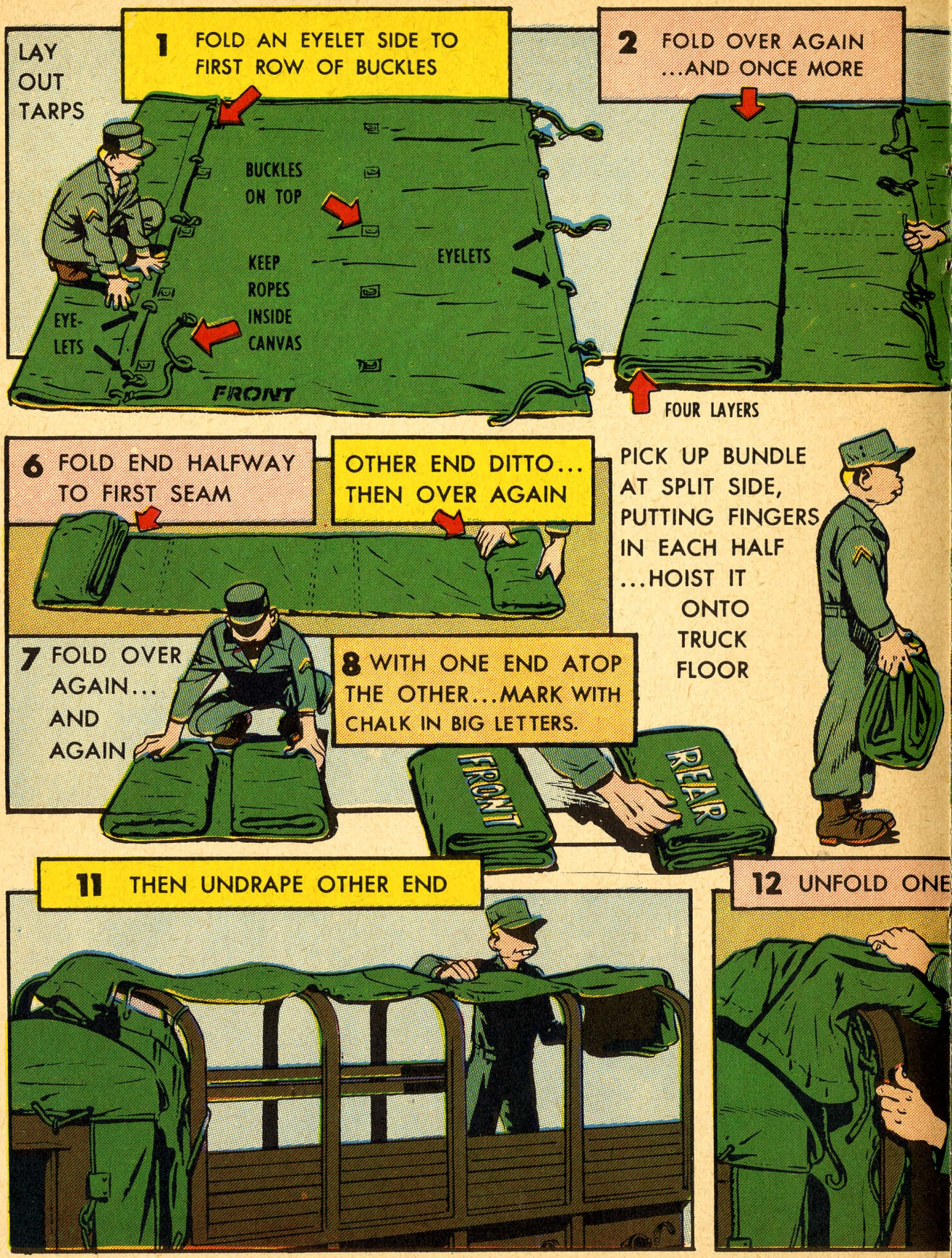
One thing to keep in mind when y'take out a track block: Don't forget to run the adjusting link back near its minimum setting—to allow for the missing block—before y'try to connect the track again.

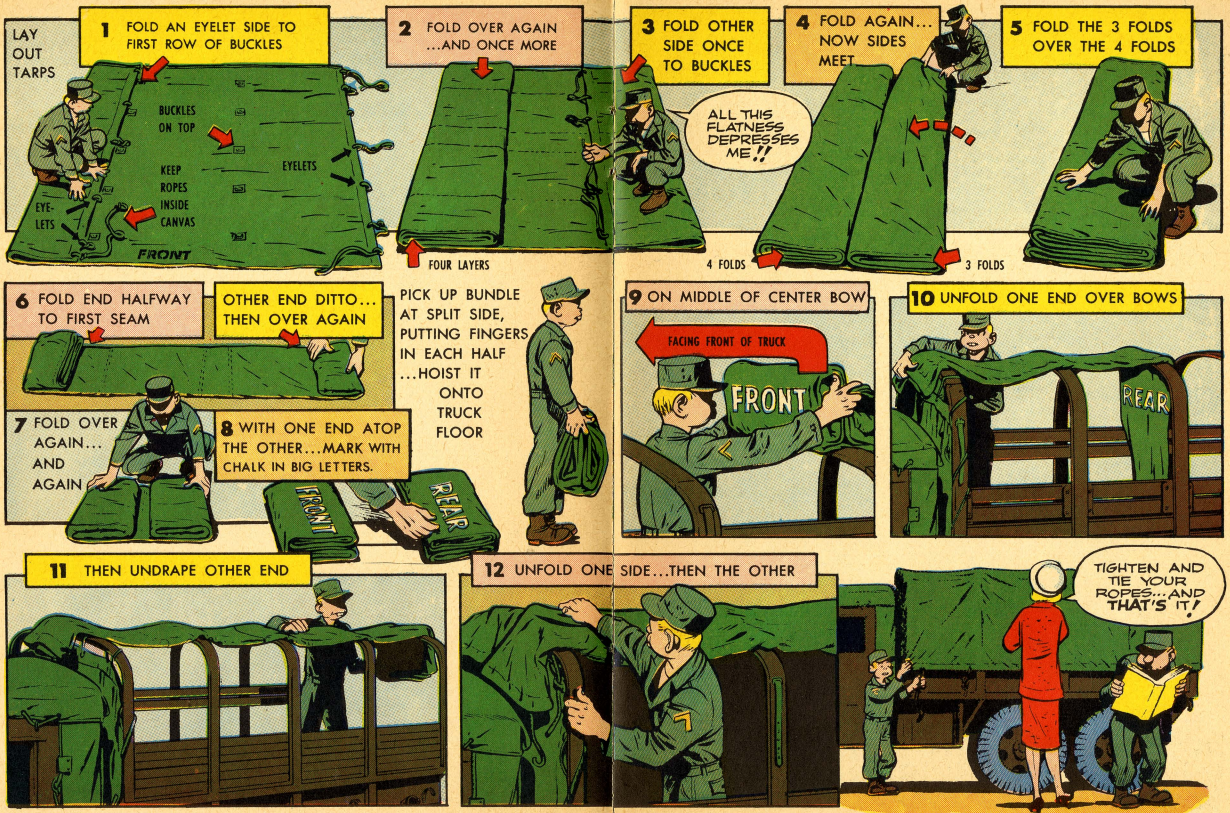
Overlook this step and you'll have a lotta trouble making ends meet. Have even heard of some absent-minded professors (prob'ly dreamin' of their favorite pin-up) who'd strain till they busted a track jack—and never once think of collapsing that adjusting link.

'Course, when the track's back together, y'then adjust the link for the proper tension.

Half-Mast

JOE DOPE
TARP TIPS AND TOSSING
IT'S THE FLAT LOOK!
IT AIN'T FAIR! IT JUST AIN'T FAIR!!
OH, NO!! W-WHAT HAPPENED TO CONNIE??
I JUST COULDN'T WAIT TO TRY ON THIS CHRIS JOHNDOOR CREATION! HOW'S IT LOOK?
CATALOG THE LONG TORSO
WHAT'S THIS? TWO GROWN MEN GOOFING OVER A TARPAULIN!
I'M DREAMIN' O' THE GOOD OL' DAYS!
WHY, DRAPING A 2½-TONNER IS ONLY A ONE MAN JOB! TRY IT....
OKAY... BUT MY HEART ISN'T IN IT!


LAY OUT TARPS
1 FOLD AN EYELET SIDE TO FIRST ROW OF BUCKLES
BUCKLES ON TOP
EYELETS
KEEP ROPES INSIDE CANVAS
EYE-LETS
FRONT
2 FOLD OVER AGAIN ...AND ONCE MORE
FOUR LAYERS
6 FOLD END HALFWAY TO FIRST SEAM
OTHER END DITTO... THEN OVER AGAIN
PICK UP BUNDLE AT SPLIT SIDE, PUTTING FINGERS IN EACH HALF ...HOIST IT ONTO TRUCK FLOOR
7 FOLD OVER AGAIN... AND AGAIN
8 WITH ONE END ATOP THE OTHER...MARK WITH CHALK IN BIG LETTERS.
FRONT
REAR
11 THEN UNDRAPE OTHER END
12 UNFOLD ONE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ALL THIS FLATNESS DEPRESSES ME!!
4 FOLD AGAIN... NOW SIDES MEET
4 FOLDS
5 FOLD THE 3 FOLDS OVER THE 4 FOLDS
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FRONT
REAR
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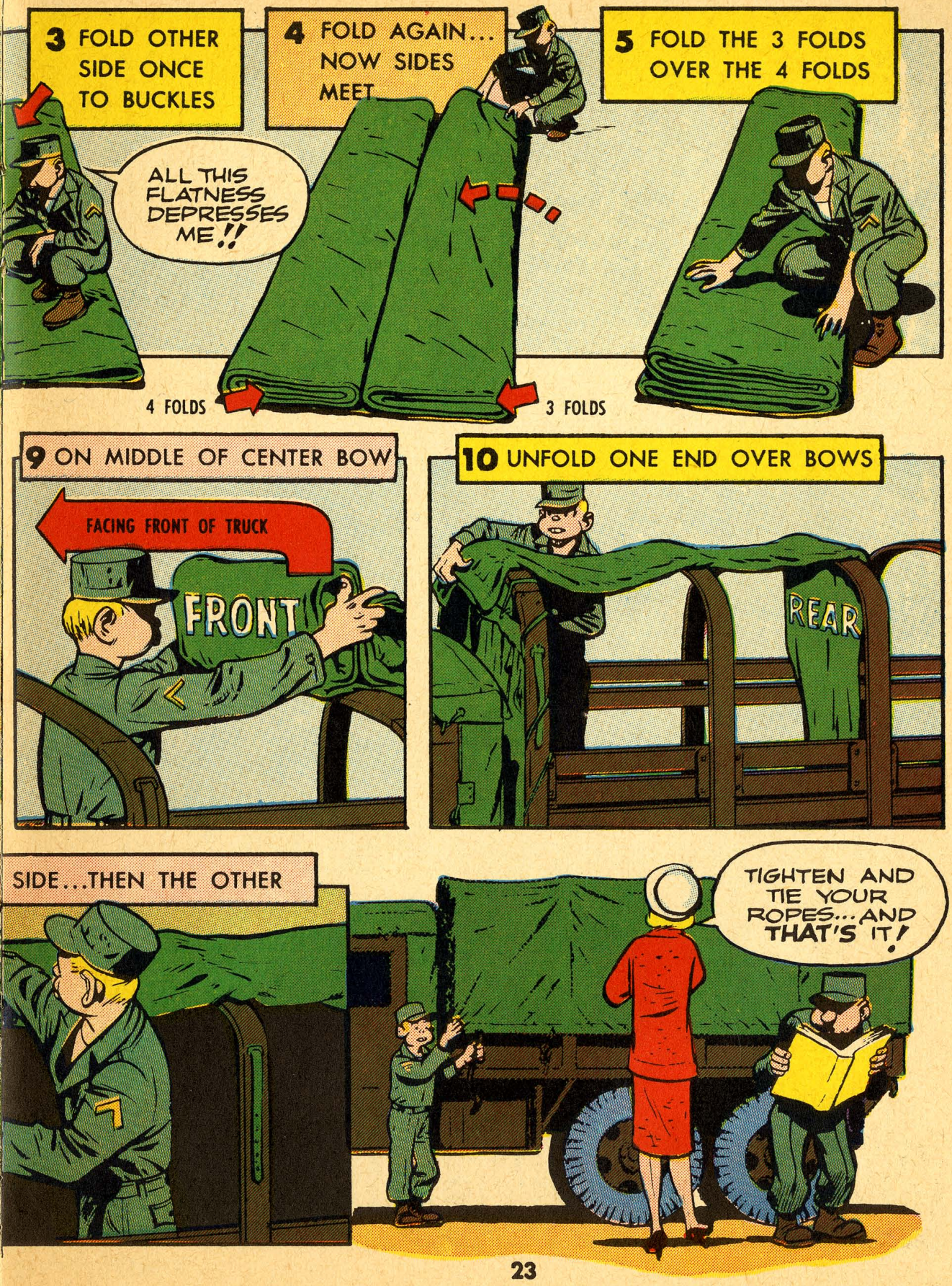
9 ON MIDDLE OF CENTER BOW
FACING FRONT OF TRUCK
FRONT
10 UNFOLD ONE END OVER BOWS
REAR
11 THEN UNDRAPE OTHER END
12 UNFOLD ONE SIDE...THEN THE OTHER
TIGHTEN AND TIE YOUR ROPES...AND THAT'S IT!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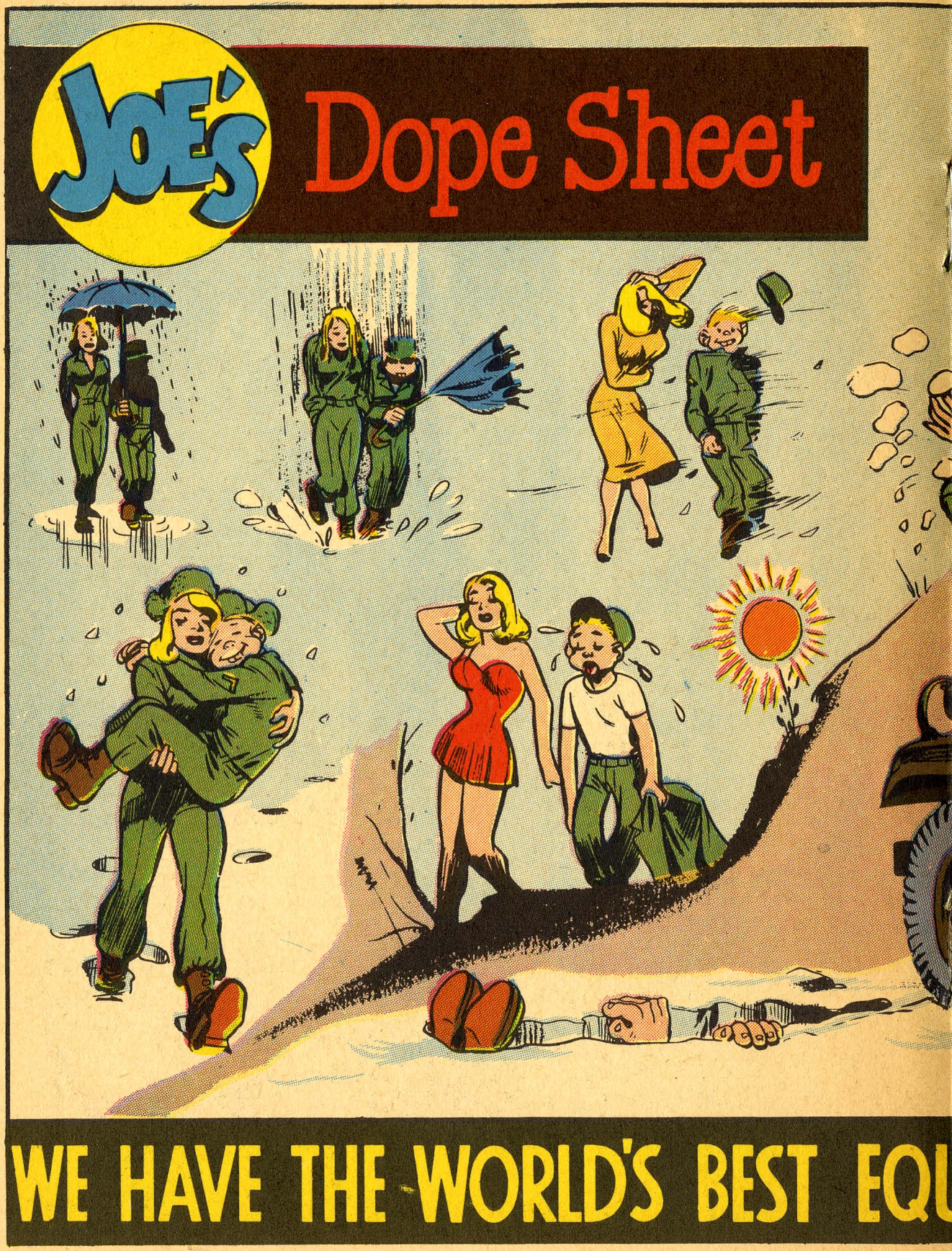

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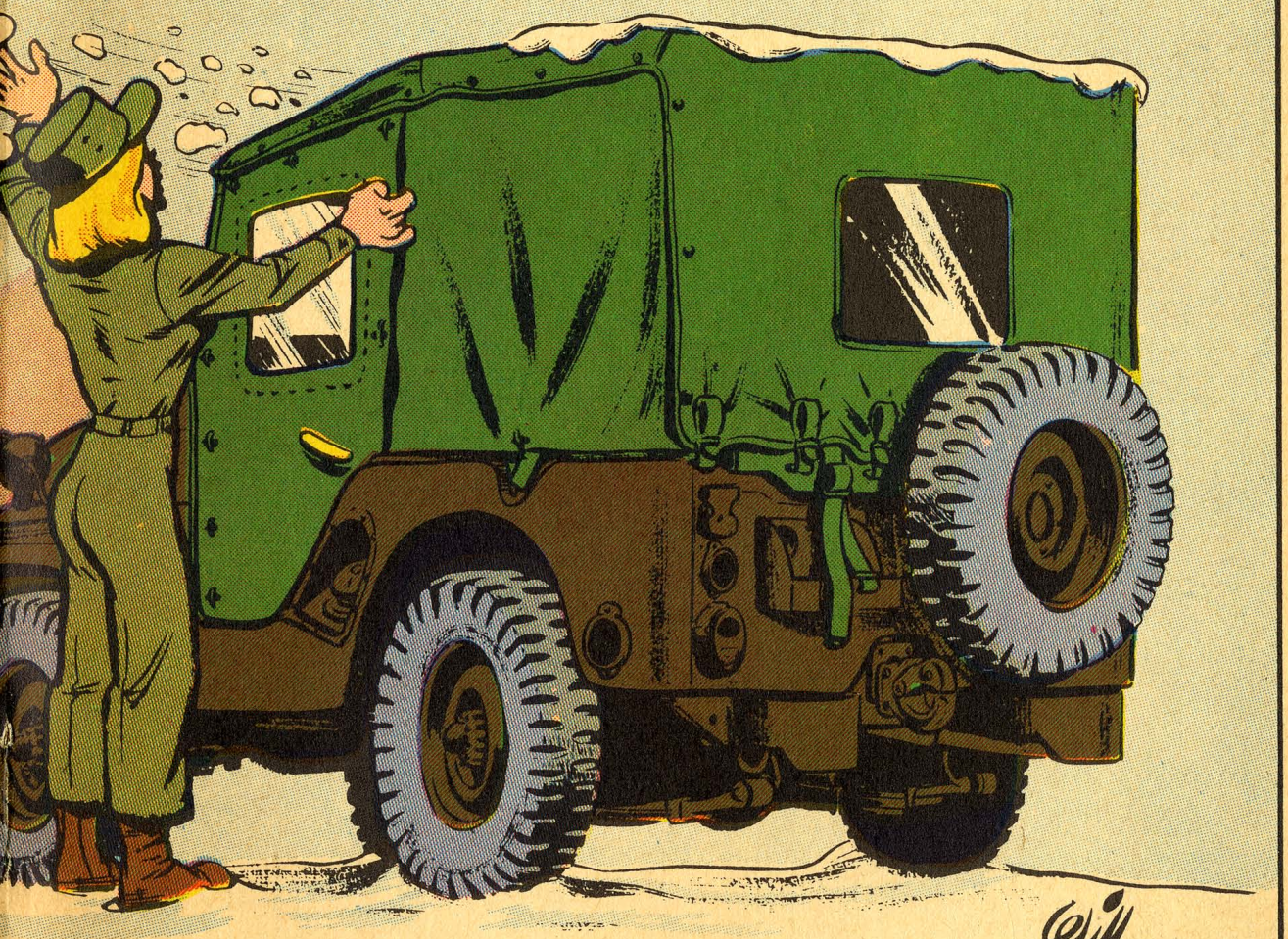
Let it rain-let it pour-let it breeze
Let it fry-let it snow-let it freeze
Your equipment stays sharp
'Neath a well-cared-for tarp
So protect those protecting OD's.



WILL EISNER

UIPMENT... Take care of it

5 BY WILL EISNER

IF YOU WANT CANVAS TO PROTECT YOUR TRUCKS AND GUNS, YOU HAVE TO PROTECT YOUR CANVAS...

MARK OUTSIDE OF EACH FLAP

...SO'S YOU'RE SURE TO PUT IT UP RIGHT

FRONT

FORWARD-TARP SEAM'S LIP OVER TARP'S EDGE BEHIND IT

WIND DIRECTION

MILDEW

STRETCH AND PULL MATERIAL TO CHECK FOR ROTTING OR WEAKENING

IF IT'S STILL STRONG ENOUGH TO PRESERVE, USE: COMPOUND, TEXTILE PRESERVATIVE, QM STOCK NO. 51-C-1633, QM5-51

...IT CUTS DOWN MILDEW

...MAKES IT FIRE AND WATER RESISTANT

BEFORE WASHING SCRUB OFF ALL MILDEW

DRY BRUSH

SAY, FOS, AIN'T SHE TURNIN' A LITTLE BLUE?

SOME KIND OF A **CHRIS JOHNDOOR** CREATION SHE'S GOT UNDER-NEATH, NO DOUBT!

CATALOG

TEARS SMALL RIPS...TURN IN FOR REPAIRS BEFORE IT'S A MAJOR JOB

WINDOWS

CELLULOID CAN BE ROLLED (FOLDING CRACKS) IT

CLEAR **VINYL** PLASTIC SHEET CAN BE FOLDED

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CELLULOID CAN BE ROLLED (FOLDING CRACKS) IT

CLEAR **VINYL** PLASTIC SHEET CAN BE FOLDED

...CLEAN SPARINGLY WITH SOAP AND WATER

ICE-SNOW-WATER

KNOCK 'EM OFF FOR LONGER WEAR

TYING MAKE IT SNUG

TOO TIGHT... IT SCRATCHES, WEARS AND TEARS

TOO LOOSE... IT FLAPS AND RIPS IN WIND

WASHING GIVE OIL AND GREASE THE SKIDS...SCRUB WITH SOAP AND WARM WATER

RINSE WITH CLEAR WATER... **DRY COMPLETELY** BEFORE FOLDING IT AWAY

ZIPPERS

LUBE WITH LUBRIPLATE, WAX CANDLE OR THIN FILM OF WATER-PUMP GREASE...

KEEPS 'EM FROM RUSTING... MAKES 'EM WORK MORE SMOOTHLY

STORAGE KEEP TARPS OUT OF DAMP PLACES OR RAIN PUDDLES

SLOTTED PLATFORM'S A BIG HELP

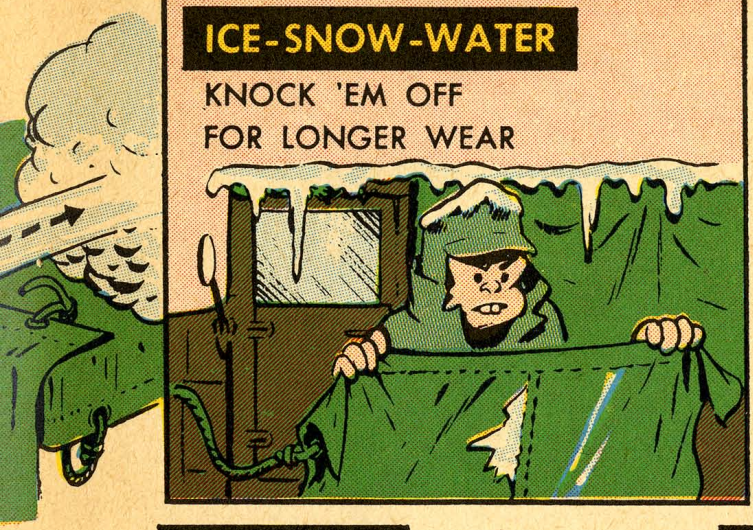
SHAKE OUT AND AIR A FEW HOURS EVERY FEW DAYS...

CUTS DOWN MILDEW (DO MORE OFTEN IN TROPICS)

UNFOLDING FOLD KEEPS 'EM FROM BREAKING

ICE-SNOW-WATER

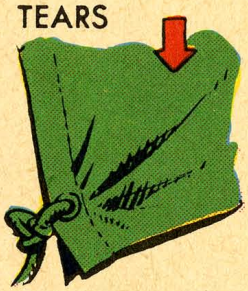
KNOCK 'EM OFF FOR LONGER WEAR

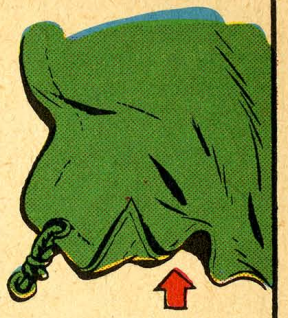


TYING

MAKE IT SNUG

TOO TIGHT... IT SCRATCHES, WEARS AND TEARS

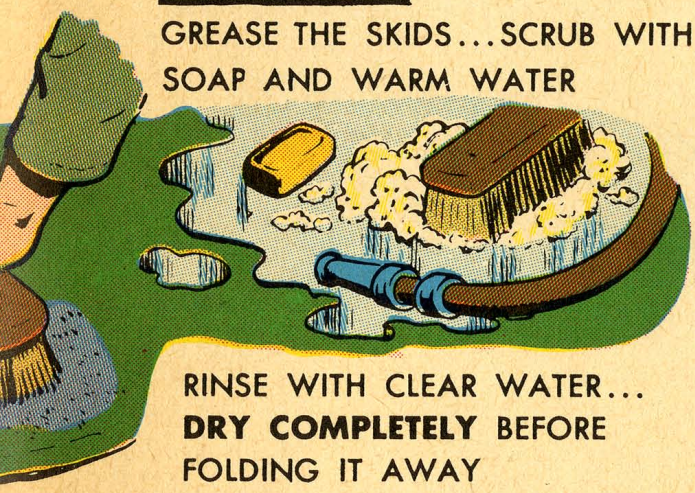




TOO LOOSE... IT FLAPS AND RIPS IN WIND

WASHING

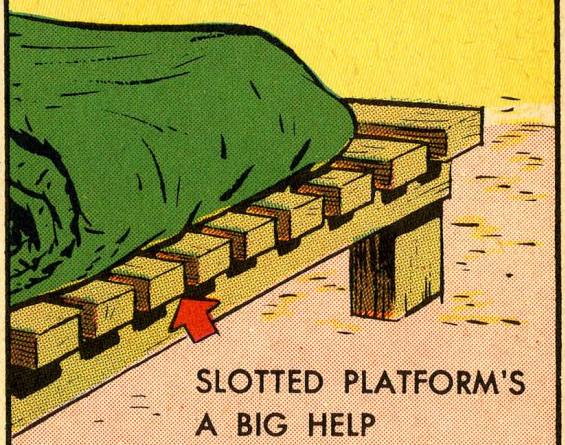
GIVE OIL AND GREASE THE SKIDS... SCRUB WITH SOAP AND WARM WATER



RINSE WITH CLEAR WATER... **DRY COMPLETELY** BEFORE FOLDING IT AWAY

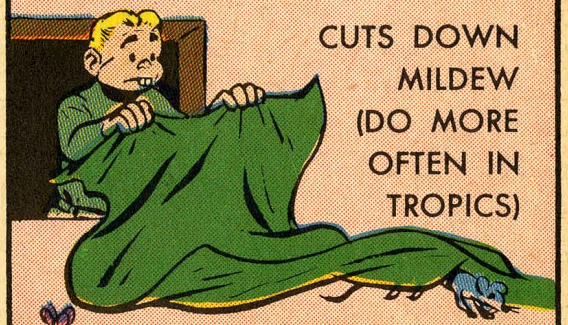
STORAGE

KEEP TARPS OUT OF DAMP PLACES OR RAIN PUDDLES



SLOTTED PLATFORM'S A BIG HELP

SHAKE OUT AND AIR A FEW HOURS EVERY FEW DAYS...



CUTS DOWN MILDEW (DO MORE OFTEN IN TROPICS)

UNFOLDING FOLD KEEPS 'EM FROM BREAKING

ZIPPERS

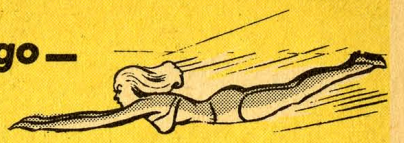
LUBE WITH LUBRIPLATE, WAX CANDLE OR THIN FILM OF WATER-PUMP GREASE...

KEEPS 'EM FROM RUSTING... MAKES 'EM WORK MORE SMOOTHLY

...CLEAN SPARINGLY WITH SOAP AND WATER

WATCH OUT FOR OLD ROPES... ROPE STRETCHES WITH USE ...THEN WHEN IT DRIES OUT THERE'S NO STRETCH LEFT!
HOT SUN
+
DAMP DEWY NIGHTS
+
WIND EQUALS
BEAT UP ROPE
NEW ROPE TIGHTENS AND HOLDS BEST
TIE IT SNUG!
WHAT'SA IDEA OF CONNIE DOIN' YOUR WORK? SHE MIGHT SNAP A GUSSET OR SOMETHING!
UH---HUH! THAT'S WHAT I'M BANKIN' ON! AAHH!
SNAP
SNUP
BOIIIING
MMM...THINGS IS BACK TO NORMAL!
JUNE IS BUSTIN' OUT ALL OVER
VIVE LA DIFFÉRENCE!

It takes no trapeze artist's tricks to go—



FLOATING ON AIR

Maybe you're no aviator. The fact is, you wheeled vehicle pilots do your jockeying aboard the same platform—air. And that's no hot-air either.

It takes just the right amount of air in your tires for you to float with the greatest of ease. With too much or too little, your vehicle, the tire casing, the vehicle's load, and you are going to get bounced, joggled and jagged. None of you will last long.

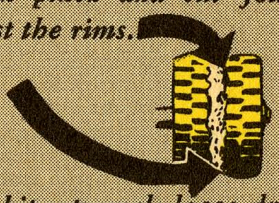
Here's the latest info on the right amount of air, based on the heaviest loaded tire (when loaded with highway and cross country loads):

PRESSURES

Vehicle and Tire	Highway or Hard-surfaced roads	Cross-Country	Mud, snow, sand (1) (2)
1/4-ton truck 7.00/16 tire	25 psi	25 psi	10 psi
3/4-ton truck 9.00/16 tire	40 psi	40 psi	15 psi
2-1/2-ton truck 11.00/20 tire (single)	70 psi	35 psi	15 psi
2-1/2-ton truck 9.00/20 tire (dual)	45 psi	45 psi	15 psi
5-ton truck 14.00/20 tire (single)	45 psi	45 psi	15 psi
5-ton truck 11.00/20 tire (dual)	70 psi	70 psi	35 psi

WHEN OPERATING AT LOW PRESSURE:

(1) *Be especially careful in mud and snow. Rock, junk, frozen earth and ice can pinch and cut your tires against the rims.*



(2) *If you hit extremely loose, dry, level sand or dune sand, you may have to go as low as—*

6 psi on the 1/4-ton.

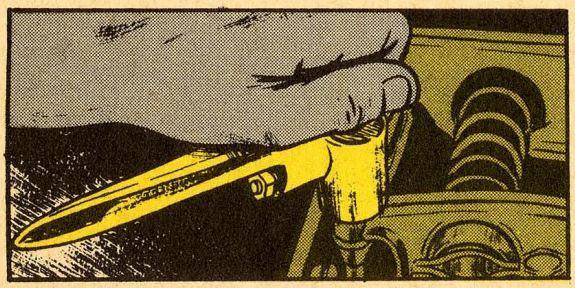
10 psi on the 3/4-ton, 2-1/2-ton singles, and 5-ton singles.

10 psi for the rear and 15 psi for the front on the 2-1/2-ton duals and 5-ton duals.

TAPPET TOOL

Dear Half-Mast,

The boys have begged, now they're crying, and soon, I'm afraid they'll be brandishing clubs if I don't tell them how to get that valve clearance adjusting tool shown on page 132, paragraph 94 of TM 9-819A.



I'd like to know the stock number and nomenclature.

Sgt D. G. N.

Dear Sgt D. G. N.,

You can take that armor off. Ordnance Stock No. 41-T-3380-40 will get you that Tool, valve clearance, adjusting w/3 sockets.

For your information, the following socket wrenches fit tool Ord Stock No. 41-T-3380-60, 41-W-3007, 41-W-3009, 41-W-3013.

All together, the tool and socket wrenches come as a unit under Ord Stock No. 41-T-3380-40.

This adjusting tool is going to be a must in every common tool set—it's required to maintain all the late series trucks which have valve-in-head engines.

When you requisition it, order "Ord Stock No. 41-T-3380-40, tool valve clearance, adjusting, w/3 sockets."

Half-Mast

WHAT SAYS 6000?

Dear Half-Mast,

Department of the Army Circular No. 1, dated 5 Jan 1951, authorizes oil changes each 6000 miles or less, depending on driving conditions. Since this circular has expired, what is the current

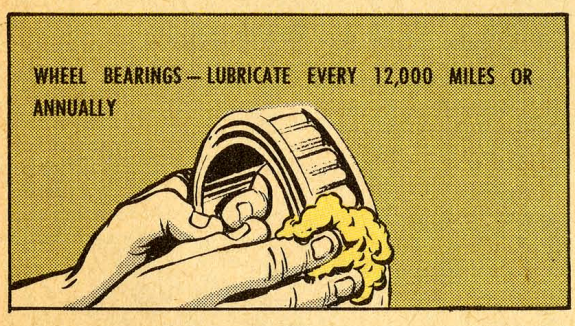
directive on crankcase oil changes? We are concerned primarily with administrative vehicles.

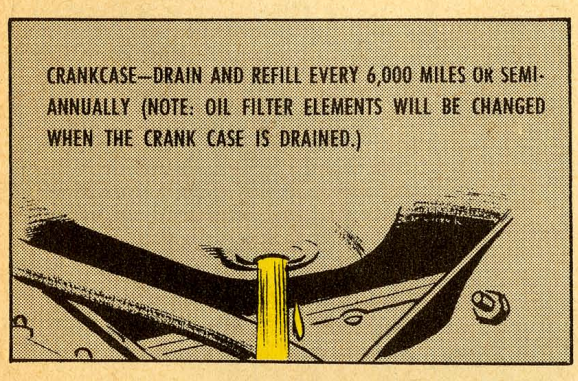
Capt P. C. H.

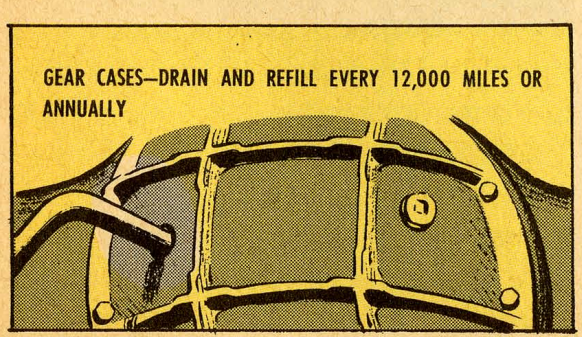
Dear Capt P. C. H.,

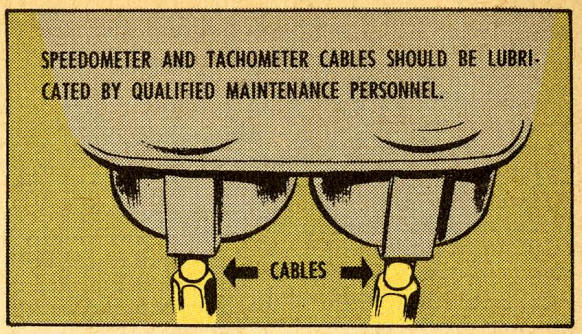
There should be no problem here. All your lube orders for army vehicles, except LO's for combat vehicles dated before January 1951 should have been changed way back in 1951 to comply with this circular. So, your directive to change oil every 6000 miles is your revised lube orders.

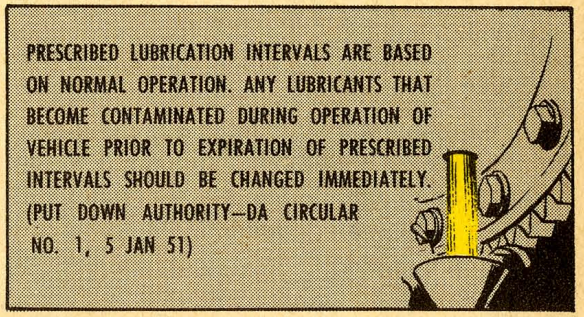
All lube orders dated before January 1951 should have this information—plus the authority—on them:











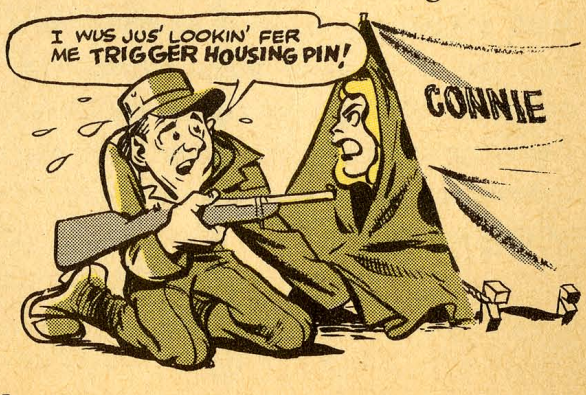
It wasn't necessary to publish this circular again in 1952 or later years, if changes were made to all the old lube orders in 1951. If and when new lube orders are published they'll have this dope and they'll be all the authority you need.

Half-Mast

TRIGGER-HOUSING PINS

Dear Half-Mast,

Lots of the new trigger-housing pins (Ord Stock No. BO28-5196450) for the cal. .30-M1 carbine are being lost. It's

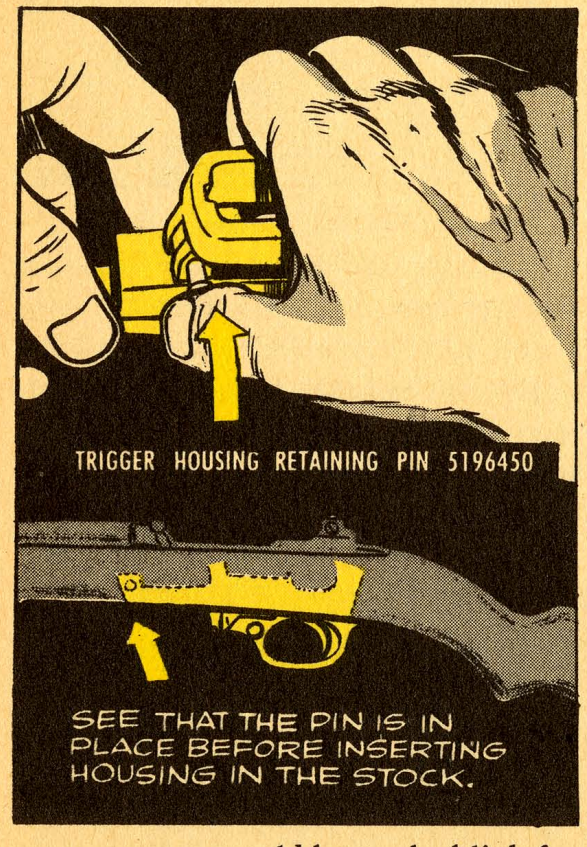


probably because they have no longitudinal spring to hold them in place when assembling the barrel and receiver group with the stock. What do you think about some clear lacquer or shellac on both ends of the pin?

Lt R. F. M.

Dear Lt R. F. M.,

A dab of lacquer or shellac on both ends would hold the pin in place but too much of the stuff can gum the works and



your weapon would be on the blink for sure. Best thing to do is to make sure that pin is in place when assembling or disassembling your carbine. Careful handling and a look-see before inserting the carbine in the stock should take care of this trouble.

Half-Mast

M1A2's BREAK-AWAY CLIP

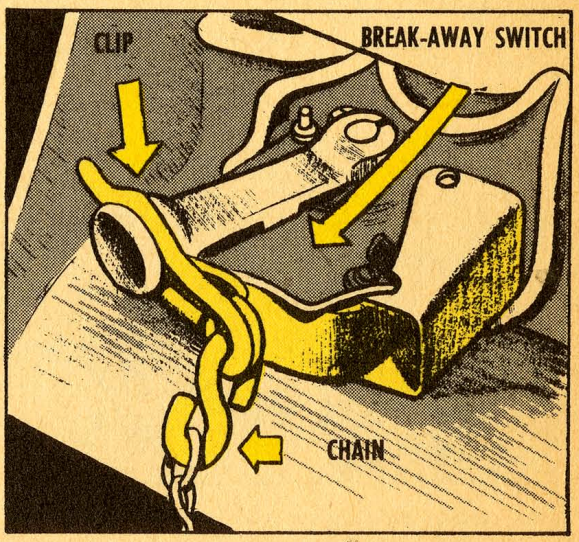
Dear Half-Mast,

Every once in a while we need to replace the spring clips on the break-away safety chains for our M1A2 90-mm guns, but we can't get 'em. Ord 7 SNL D-28 lists the chain and hook but not the clip. Looks like if we can get a chain and hook we ought to be able to get a clip. What do 'ya say?

Sgt L. L. J.

Dear Sgt L. L. J.,

Ord 7 SNL D-28 is a little behind the times. Ord 7 SNL D-38 (for 90-mm M2 guns) lists the chain as completely assembled. So does Ord 7 SNL D-32 (for the 120-mm guns). You will shortly be able to get the assembly by requisitioning Chain, safety, switch, assy (break-



away) Ord Stock No. DO38-7165471 as it is listed in a pending revision to ORD 7 SNL D-28.

Half-Mast

HERE'S A LIST OF ADDITIONAL OFFICIAL PUBLICATIONS ON ORDNANCE EQUIPMENT WHICH ARE OF INTEREST TO A LOT OF YOU.

SNL's

Ord 8 SNL A-55 Sec 28 Mt, cal. .30 or cal. .50 MG, M35C, Jan 55

Ord 8 SNL A-55 Sec 44 Mt, ring, M66, Jan 55

Ord 8 SNL A-89 Cal. .30 MG, M37 (tank), Feb 55

Ord 8 SNL A-91 (TO 11W2-5-1-104) Gun, auto 20-mm, M39 and M39A1, Jan 55

Ord 8 SNL A-97 Mt, MG, AA, cal. .50 (8683227), Jan 55

Ord 8 SNL B-45 Rifle-shotgun, survival, cal. .22/.410 gage, M6, Jan 55

Ord 8 SNL B-48 Rifle, spot, cal. .50, M8 (T46E2), Jan 55

Ord 8 SNL C-68 Gun, 75-mm, M6; mt, combo gun, M64, Jan 55

Ord 8 SNL C-74 Rifle, 75-mm, M20, T21E12, Jan 55

Ord 7 SNL C-93 Rifle, 106-mm, M40 (T170E1); mt, 106-mm rifle, M79, Jan 55

Ord 8 SNL C-93 Rifle, 106-mm, M40; mt, 106-mm rifle, M79, Jan 55

Ord 9 SNL F-205 Vol 3 Light, instru, M2, M12, M13, M18, M22, M28, M46, Jan 55

Ord 7 SNL F-237 Slide, M1; table, graph fir M22, M23, M24, M25, M26, M26A1, M28, M30, M31, M32, M33, M34, M35, M37, Jan 55

Ord 8 SNL F-237 Slide, M1 (See Above), Jan 55

Ord 8 SNL F-271 Mt, telescope, M44A1, Jan 55

Ord 8 SNL F-356 Sec 3 Finder, range, T46E1, Jan 55

Ord 8 SNL F-358 Mt peris, M88, M89, M93 (T176E1) T176E2, M94 (T177E1), Jan 55

Ord 8 SNL F-363 Sight, comput, M38 (T154), Jan 55

Ord 8 SNL F-366 Sight unit, M34, M34A1, M34A2, Jan 55

Ord 8 SNL F-384 Sight, peris, T42, Jan 55

Ord 8 SNL F-388 Mt, peris, T195, Jan 55

Ord 9 SNL F-389 Sec 1 Indicator, az, M20, M21, Jan 55

Ord 9 SNL F-389 Sec 2 Indicator, az, T25, T28, Jan 55

Ord 8 SNL G-249 Vol 1 Winteriz equip—heaters, personnel, for winteriz kits, Jan 55

Ord 8 SNL G-249 Vol 2 Winteriz equip—heaters, engine, for winteriz kits, Jan 55

Ord 8 SNL G-249 Vol 12 Winteriz equip for truck, 2-1/2 ton, 6x6, M34 series (SNL G-742), Jan 55

Ord 8 SNL G-249 Vol 40 Winteriz equip for truck, ambu, front line, 1/4-ton, 4x4, M170 (SNL G-758); trk, util, 1/4-ton, 4x4, M38A1 (SNL G-758), Jan 55

Ord 7 SNL G-254 Tank, 90-mm gun, M48 (T48), Jan 55

Ord 9 SNL G-754 Chassis, trlr, 1-1/2-ton, 2-whl, M103A1; trlr, cargo, 1-1/2-ton, 2-wheel, M104, M104A1, M105A1; trlr, tank, water, 1-1/2-ton, 2-whl, 400-gal, M106, M106A1, M107A1, Dec 54

Ord 8 SNL J-7 Sec 3 Tool set, organiz maint (2d ech) Set No. 2, common (41-T-3538-855), Jan 55

Ord 8 SNL J-7 Sec 6 Tool set, organiz maint (2d ech) Set No. 5, oxy-acy (41-T-3545-14), Jan 55

Ord 8 SNL J-7 Sec 7 Tool set, organiz maint (2d ech) Set No. 8, remover, tire, heavy duty (41-T-3545-17), Jan 55

Ord 8 SNL J-8 Sec 12 Shop Set, auto fuel and elec sys field maint, Jan 55

Ord 8 SNL J-16 Sec 44 Tool sets, field and depot maint for engines, Continental, Series AOS-895 and Av-1790 used in: Carrier M75; T97 Gun, 155-mm SP; M42 twin 40-mm; T108 SP Howitzer; T98E1 SP 105-mm howitzer; M44 155-mm SP howitzer; M41, M41A1 tank; M47, M48, T43E1 tanks; T67 flame-thrower tank; M46, M46A1, tank; M8E2 HS tractor; M249, M250 gun-lifting trucks, Feb 55

Ord 8 SNL J-16 Sec 48 Tool sets, field and depot maint for aux engines (Wisconsin TFT and TFG) (General Motors GMA41-1) used in: M19A1 twin 40-mm gun carriage; M75 personnel carrier; T97 SP 155-mm gun; M42 twin 40-mm; T98E1 SP 105-mm howitzer; M-44SP 155-mm howitzer; T108 SP 8-in gun; M41, M41A1 tank; M47, M48, T43E1, M46, M46A1 tanks; T67 flame-thrower tank; M51 recovery vehicle (tank), Jan 55

Ord 8 SNL J-16 Sec 48, Tool sets, field and depot maint for hull and suspension used in: T97 SP 155-mm gun; T108 SP 8-in howitzer; M47, M48, T43E1, M46, M46A1 tanks; T67 flame-thrower tank; M51 recovery vehicle (tank), Feb 55

Ord 8 SNL J-16 Sec 52 Tool sets, field and depot maintenance for: T97 SP 155-mm gun; T108 SP 8-in howitzer; M47, M48, T43E1, M46, M46A1 tanks; T67 flame-thrower tank; M51 recovery vehicle (tank), Jan 55

Ord 8 SNL J-34 Spec tool sets for large cal free flight rocket materiel (SNL Groups C and D), Jan 55

Ord 8 SNL J-34 Special tool sets for large cal free flight rocket materiel (SNL Groups C and D), Jan 55

Ord 7-8 SNL J-125 Drill, elec, port, 115-v, univ curr, hv-duty, 1/2-in cap (Black & Decker) mod No. 40 Type "E" (40-D-345), Jan 55

Ord 7-8 SNL J-140 Drill, pneu, port, non-rev, 3-jaw, key type chuck, 1/2-in cap (Chicago Pneu Tool No. 310-925) (40-D-434), Jan 55

Ord 7-8 SNL J-159 Tester, speedo: cabinet type, w/tacho, slide plate speed control, 1/12-hp motor, AC, 110-v, 60-c, single-ph (F W Stewart, mod No. 800) (4910-241-8408) (former bench 40-B-95), Jan 55

Ord 7-8 SNL J-693 Shaper, metal, horiz, 16-in, 5-hp, 220-v, 60-c, 3-ph (Cincinnati Shaper mod 16 in., hv-duty) (40-S-1697), Jan 55

Ord 3 SNL P-5 Ammo for AAA, Jan 55

Ord 3 SNL R-4 Ammo mortar, including fuzes, propel charges, other comp, Jan 55

TECHNICAL MANUALS

TM 9-1861 Cleaning and black finishing ferrous metals, Feb 55

TM 9-2031 Cal. .50 AA MG mts (7364875 and 8346119), Dec 54

TM 9-3031 90-mm Gun M41 (T139) and combo gun mt T148 for 90-mm gun tank M48, Jan 55

TM 9-6011 Peris mts T184, T184E1, Jan 55

TM 9-6133 Fuze setter M26, Jan 55

TM 9-7009-3 2-cyl aux engines (Wisconsin, mod TFT, TFG), Dec 54

TM 9-7420 Cargo tractor M8E2, Jan 55

TM 9-8022 (TO 19-75AA-173) 2-1/2-ton Trucks M34 and M35, M44, M45, M46, M47, M59, M48, M275, M49, M50, M108, M109, V-17A/MTQ, V-18A/MTQ, Dec 54

TM 9-8601 (TO 19-75CAAB-10) Power brake equip—Midland Steel Products, Dec 54

TM 9-8605 Steering Gears (Gemmer), Dec 54

TM 9-9036-2 (TO 34F2-2-1-174) Whl size 7x1-in single-ph 60-cy 110-v 1/2-hp bench grinder (Baldor Elec mods S3984, S5493) (40-G-142-5), Jan 55

TM 9-9072-2 (TO 34C2-3-20-1) 1/3-hp 115-v 60-cy single-ph 1/2-in cap 14-in min-swing sensitive bench-type drill press (Famco mod 80) (40-P-1174), Dec 54

ORDNANCE MWO's

F350-W5 FCS T38: Apply fld chg 9 to comp T27E2, rad trkr T9, pwr cntrl T21E1, mnt fld chg nampits, F, Dec 54

F350-W6 FCS T38: Apply fld chg 12 to comp T27E2 provid prtect for the peris "A" hrnss as peri rotate, stowed-operative, F, Dec 54

F350-W7 FCS T38: Apply fld chg 15 to rad trkr T9, prev vibrat, loose scanner clamps, F Dec 54

F350-W8 FCS T38: Apply fld chg 16 to rad trkr T9, add sfty wir subassys, F, Dec 54

F350-W9 FCS T38: Apply fld chg 17 to rad trkr T9, prev damg micrswtch, ftswtch assy, F, Dec 54

F350-W10 FCS T38: Apply fld chg 28 to rad trkr T9, elim leak R-F energy in waveguide sect, F, Dec 54

F350-W11 FCS T38: Apply fld chg 34 to pow cntrl T21E1, repic swtch actuator 7626208, F, Dec 54

F350-W12 FCS T38: Apply fld chg 40 to rad trkr T9, prev ground high vltg leads, high humidity cond, F, Dec 54

F350-W13 FCS T38: Apply fld chg 11 to comp T27E2, provid secure mnt for rate selctr swtch, F, Dec 54

F350-W14 FCS T38: Apply fld chg 13 to rad trkr T9, prev az elev hnd-whl shafts freezing, F, Dec 54

F350-W15 FCS T38: Apply fld chg 19 to rad trkr T9, chg type resolver synchros, F, Dec 54

F350-W16 FCS T38: Apply fld chg 20 to rad trkr T9, prev range slew buttons sticking, F, Dec 54

F350-W17 FCS T38: Apply fld chg 21 to comp T27E2, provid access inside base facili serv peris T33, F, Dec 54

F350-W18 FCS T38: Apply fld chg 24 to pow cntrl T21E1, decrease pow cntrl synchro time, reduce pow cntrl start load, F, Dec 54

F350-W19 FCS T38: Apply fld chg 29 to rad trkr T9, permit finer tun local oscill, F, Dec 54

F350-W20 FCS T38: Apply fld chg 31 to pow cntrl T21E1, limit trvl, amplif clamp screw assys, F, Dec 54

F350-W21 FCS T38: Apply fld chg 39 to rad trkr T9, insure positive actn, mgnetrn tung cntrl, F, Dec 54

F350-W22 FCS T38: Apply fld chg 41 to comp T27E2, provid increased timing accuracy, chckng constant speed motor RPM, F, Dec 54

A61-W8 Multi cal. .50 MG mts M45D, M45F only: Provid manual sys of controls for mts M45D, M45F on multi gun mtr carrs M16, M16A1, and M16A2, F, Jan 55

D57-W2 280-mm gun T131; 280-mm gun carr T72: Latest improvement in design, F, Jan 55

D58-W2 90-mm gun M41 (T139): Inscribe notches for bore-sighting gun with counterweight attached, F, Jan 55

F350-W23 FCS T38: Eliminate range port cover on radar tracker T9, F, Jan 55

F358-W2 Peris mt T176: Conversion to periscope mount M88, F, Jan 55

F358-W3 Peris mt T177: Conversion to peris mt M89, F, Jan 55

F360-W1 Elevation quad T21: Conversion to elevation quad M13, F, Jan 55

G1-W57 M41 (T41E1), M41A1 (T41E2) Tanks; M42 twin 40-mm: Instal of new batry clamps, O, Jan 55

G1-W59 2-1/2-ton 6x6 gas tank trks M49, M217: Instal of fuel segregator kit, F, Feb 55

G200-W1 Light tank M24: Replace siren with horn, O, Jan 55

G254-W1 M48 tank: Provide new spring for shift cont handle assy, F, Jan 55

G660-W1 Ammo trlr M10: Provide means of operation with a prime mover having either a 24-v or 6-v elec sys, F, Feb 55

G758-W3 Modif provide installation of 106-mm rifle M40 with mount, M79, F, Feb 55

Y4-W1 Fire contr director central XM1; radar track central XM2; target track ant-receiv-trans gp XM4; missile-track antenna receiv-trans gp XM3; acq ant-receiv-trans grp XM2; trlr-mtd electron shop XM304; radar-radio-freq test set XM18; radar ant coll gp XM5: Apply field changes to corr def and to insure optimum perf of affected maj items, F, Jan 55

Y9-W1 Btry charge rack XM6, provide a terminal guard to improve safety and effi, F, Feb 55

Y18-W1 Guided mjssi radio freq test set, XM19: apply field changes to corr def and to insure optimum perf of test sets, F, Jan 55

TECHNICAL BULLETINS

TB 9-235-10 37-mm auto Gun M1A2 on combo gun mt M54: Bore sight and care of ring sight 7686254, O, Jan 55

TB 9-718A43 M47 Tank: Correction of misalined turret traverse lock gear, O, Jan 55

TB 9-837-7 5-t Trucks, M41, M54, M64, M51, M62, M40, M61, M63, M139, M52, M246: Attachment of lifting lines, O, Jan 55

TB 9-1819AB-5 Hydra Transm (GMC mod 302M): Identify and inspect intern rev gear, w/beating, assy, D, Jan 55

TB 9-2855-9 (TO 19-75CFBA-9) Instruct for instal powerplant hter kit for M34 trk (24V) (SNL G-742), F, Jan 55

TB 9-2855-36 2-1/2-t Trucks M109, M220: Sealing hole in exhaust tube elbow, F, Feb 55

TB 9-6092-3 AA FCS T33C, T33D, M33C, M33D: Instruct replac antifreeze with grease in reservoir of acq ant drive unit, O, Jan 55

TB 9-6092-4 AA FCS T33C, T33D, M33C, M33D: Provide maint precaut to prevent contam of potentiometer oil in variable prec resistors (potentiometers), O, Jan 55

TB 9-6159-1 Ballistic computer T31: Field maint of ballistic computer T31, F, Feb 55

TB 9-6165-1 Ord maint: Azi indi T28, D, Jan 55

TB Ord 591 762-MM rket heat and tie-down kit XM46: Instal kit 8407297 on 5-ton cargo truck M55, O, Jan 55

TB Ord 592 Scabbards M8, M8A1: Identify scabbard M8 series, F, Jan 55

LUBE ORDERS

LO 9-2024 Gun, auto 20-mm, M24A1, Nov 54

LO 9-7012 M48 tank, Dec 54

LO 9-7406 Bulldozer, tract mtg, T8E4, Nov 54

LO 9-8226 Trlr, 1-1/2-t, 2-whl, chassis, M103A1; trlr, 1-1/2-t, 2-whl, cargo, M104, M104A1, M105A1; trlr, 1-1/2-ton, 2-whl, water tank, M106, M106A1, M107A1; trlr, 1-1/2-t, 2-whl, constr, K52, Nov 54

MISCELLANEOUS

FT 75-BK-1 Gun, 75-mm, AA, T83E6, T83E7 (M35) firing shell, HE, T50E2, Nov 54

FT 75-BJ-2 (Abridged) Rifle, 75-mm, M20 firing shell, HEP, M349 (T151E21), Dec 54

FT 75AA-BC-1 Gun, 75-mm AA T83E6, T83E7 (M35) firing shell, HE, T50E2 with fire control system, T36 on mount, AA, 75-mm T69, Oct 54

TJC 75-BK-1 Traj chart for gun, 75-mm, AA, T83E6, T83E7 (M35) firing shell, HE, T50E2, Dec 54

DA Pamphlet No. 310-29 Index of supply manuals-Ordnance, Jan 55

SB 9-50 Small arms wpns used by replacemt trng ctrs, units in fld trng: Basis for return to depot maint shops for inspect and rebld, F, Jan 55

FIRING TABLES

FT 4.2-F-1 (Abr) 4.2-F-1 mortar M30 w/mt M24A1, mt M24 fire shell, HE, M329, M329B1; HE, M3A1; HE, M3, M3 alt; chem, M2A1 (WP FS, HD); chem, M2, M2 alt (WP, FS, FM, H, HT, HD, CG): chrg, propel, M36; chrg, propel, M6, Oct 54

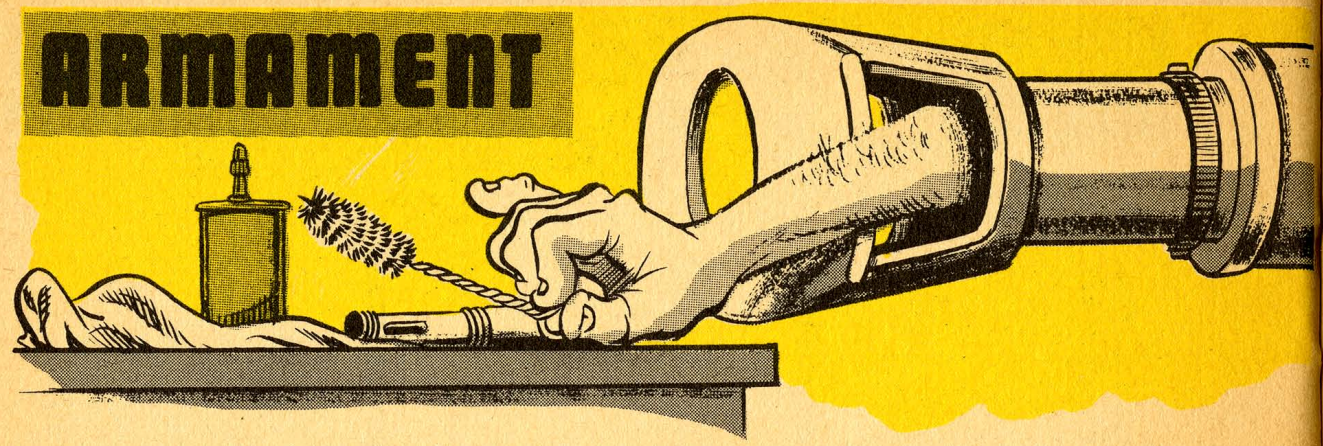
FT 105-A0-1 (Abr) 105-mm rifle, M27A1 fire shell, heat, M341, Oct 54

FT 105-AH-3 (Abr) 105-mm rifle, M27A1 fire shell, HE, M323; smoke, WP, M325, Dec 54

NOTE—On TB's, SB's and MWO's:

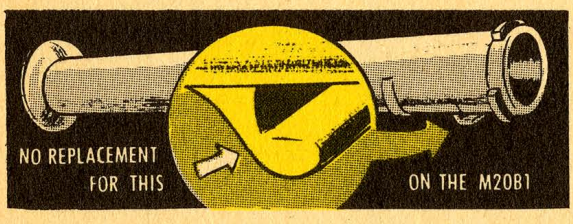
O—Organizational Maintenan
F—Field Maintenance
D—Depot Maintenance

ARMAMENT



EASY ON THE HOOKS

Those front barrel hooks on the 3.5-in rocket launchers won't take too much bangin' around, so watch it, will 'ya? The ones on the M20 series can be replaced (Ord Stock No. B042-7313375). But if the ones on M20B1 break off, you've had it. You'll have to get a new launcher.



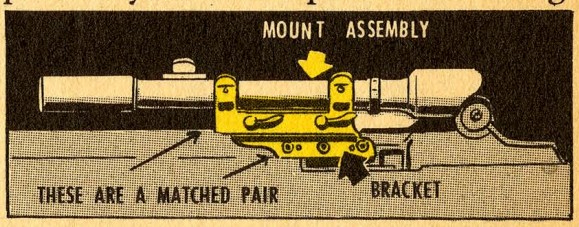
FOR EASIER COCKING

If MWO Ord D58-W1 hasn't been applied to your M48 tank gun yet, you'd better do a little pushing. The MWO gives you a new manual cocking lever (Ord Stock No. D058-7307703) that's a little easier to handle. If the MWO hasn't been recorded in your gun book, take your tank to Ordnance and have 'em make the switch for you.

BE A SNOOPER (IF YOU'VE GOT A SNIPER)

If the M1C rifle is your baby, you'd better make sure its parts don't get interchanged or switched with other sniper rifles.

For instance, the upper and lower part of your telescope mount belong



together on your rifle. There are no if's, and's, or but's—that's the way they're made—that's the way it's gotta be. They're a matched pair and must not be separated. If the telescope or any part of mount is interchanged the rifle must be retargeted.

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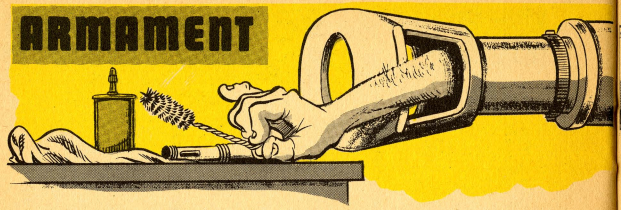

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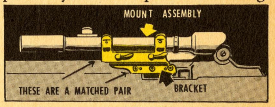

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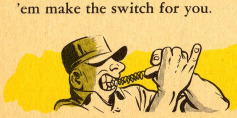
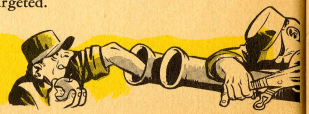
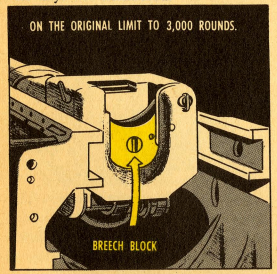




When there's any interchanging of telescopes to be done, better let Ordnance do it—it's their job.

SKYSWEEPER BREECHBLOCK

Keep a close eye on the original breechblock of your 75-mm Skysweeper—its days are numbered.



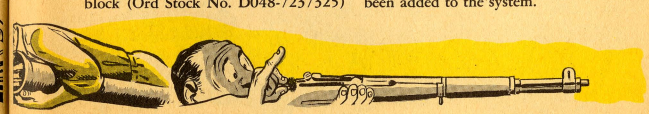
Word has it that soon's your breechblock (Ord Stock No. D048-7237325) has kicked off 3000 rounds, it's to be replaced—regardless of its condition. Your Ordnance officer can quote you the authority from ORDBA-FSM-10, FA 472.9-553.

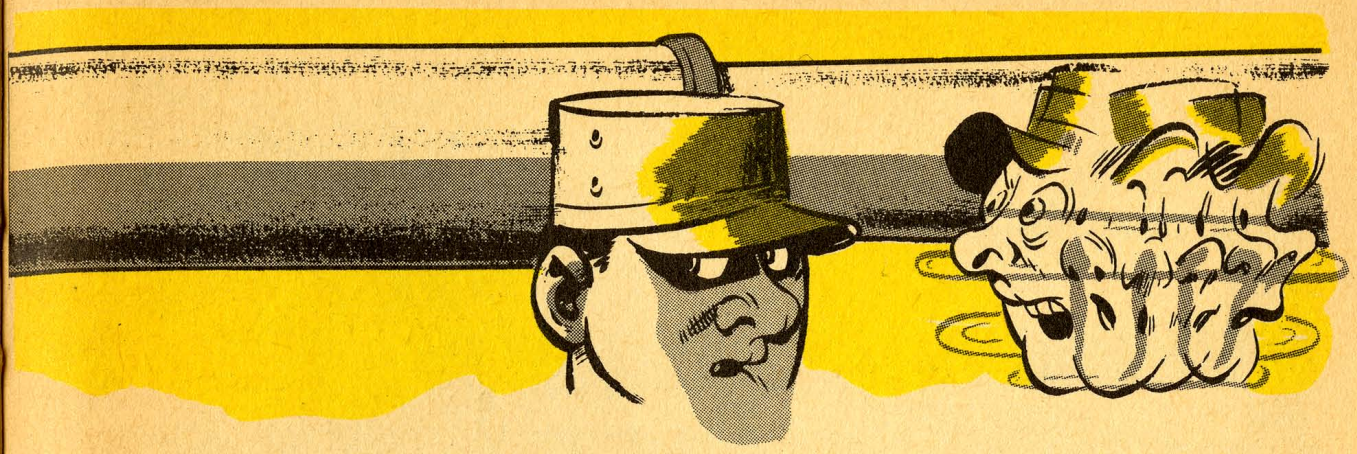
When you hit 3000 rounds, record it in your Weapon Record Book, Part 1 (or Gun Book, Form 00-5825) and hold everything until you get a new block. And when you get it, note that in your gun book, too.

An MWO is in the mill that will provide a stronger breechblock. You'll be getting the new blocks (Ord Stock No. D048-7308308) soon's the present ones are used up. There's no round limitation on the new ones as yet.

WHEN TO AND WHEN NOT TO

To stop waveguide arcing in your M33's acquisition antenna when you're operating at full power, an acquisition rotary-joint-pressurization unit has been added to the system.





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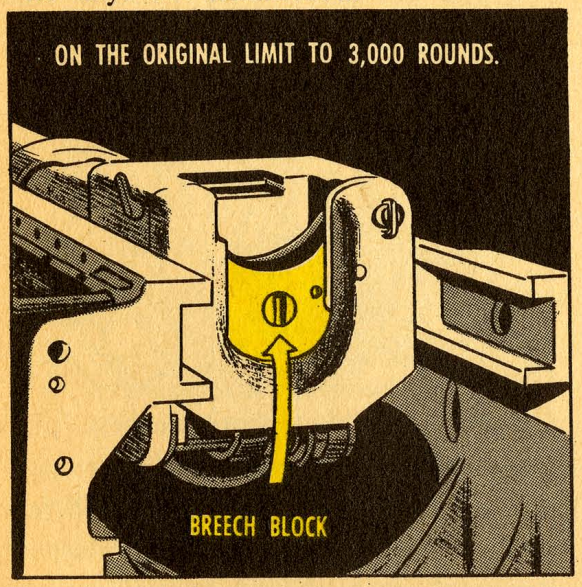

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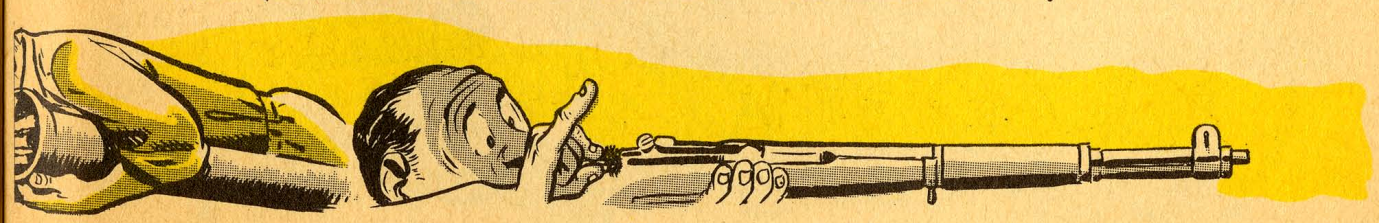
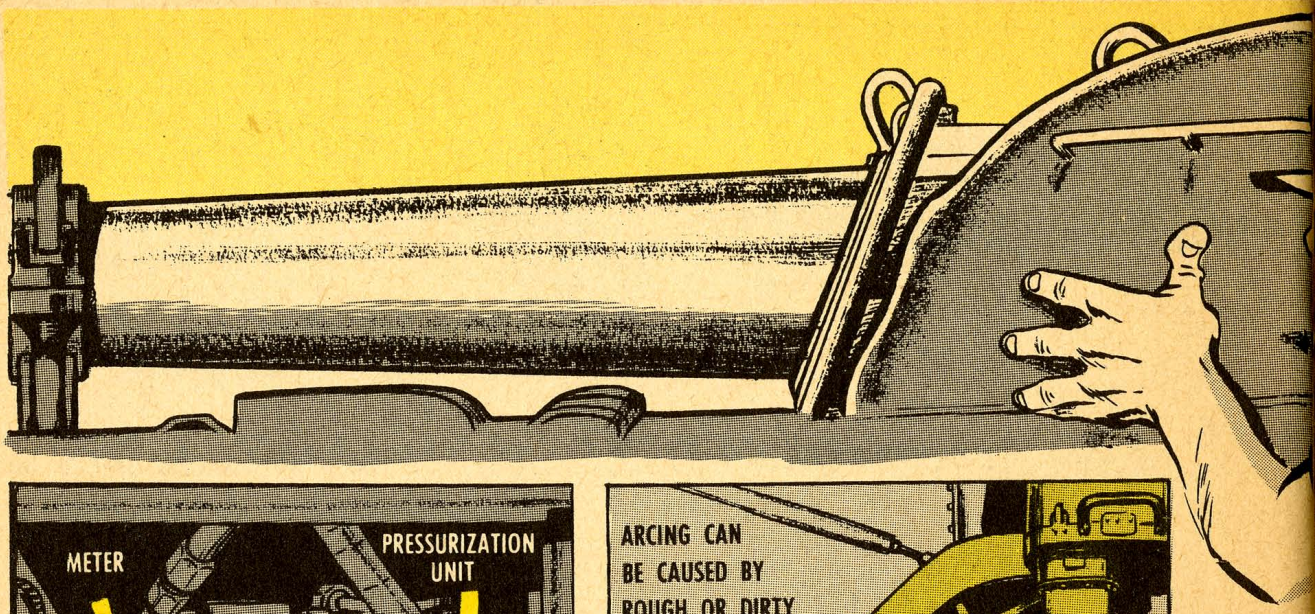
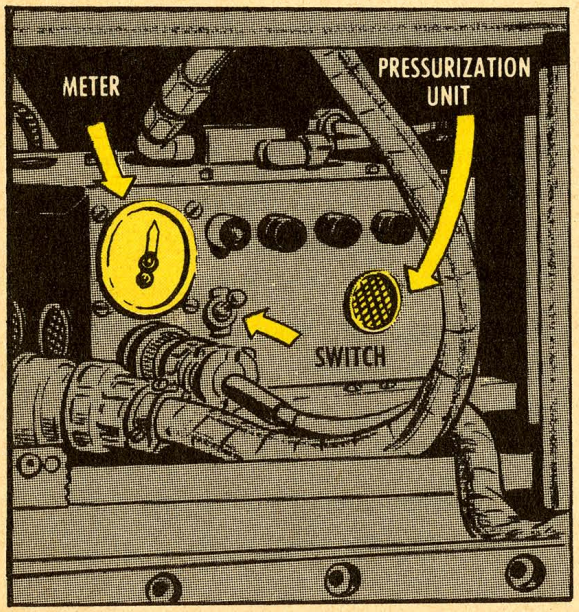
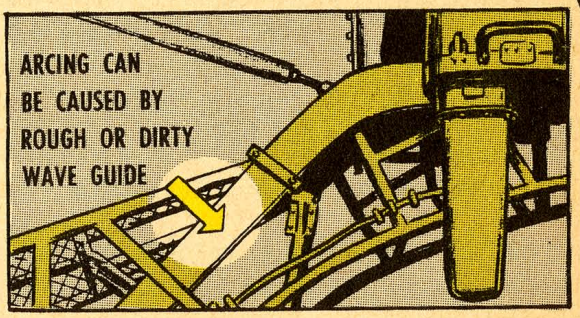


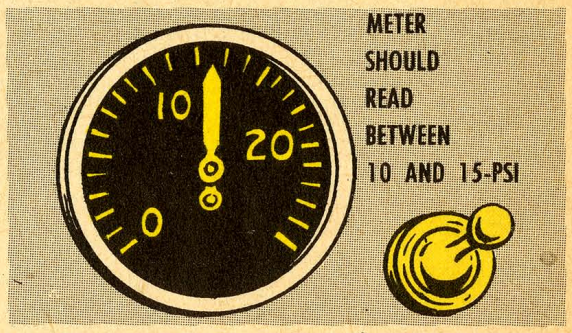




Some of these units have been failing because they're turned on and forgotten. The only time you turn it on is when you've got a situation that'll cause arcing across the guides. You'll get arcing when you're operating at full power at altitudes of 1000 feet or more. Or, if the waveguides are rough or dirty.



When the unit's working right, the meter on it should read between 10 and



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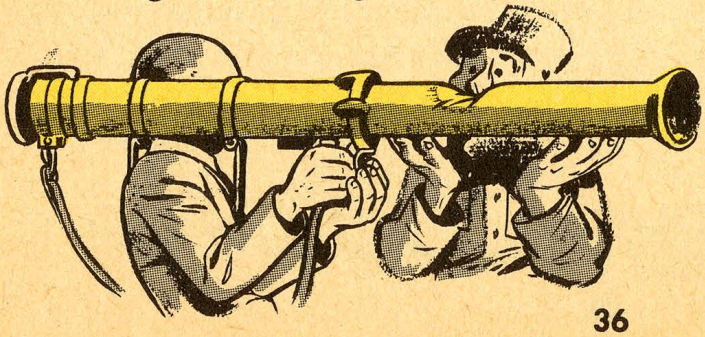

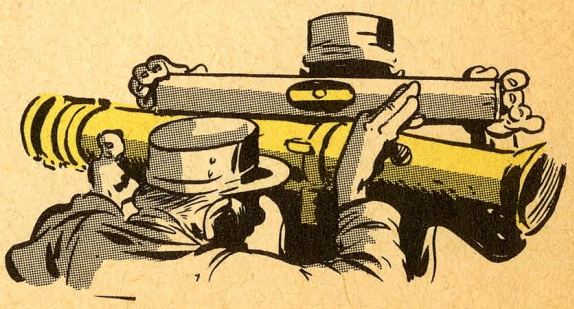

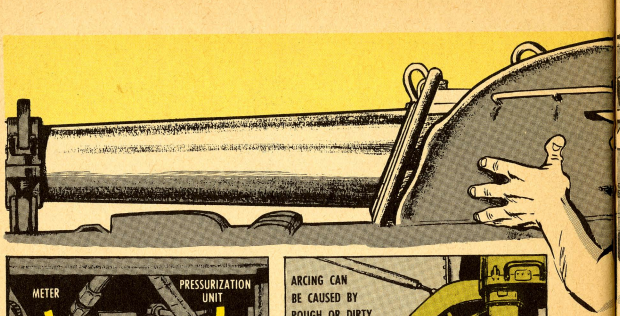

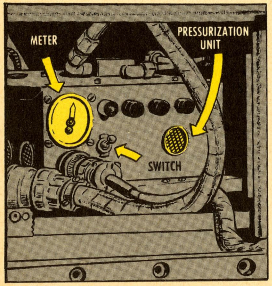

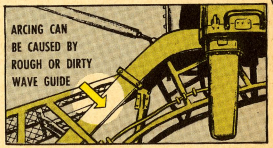

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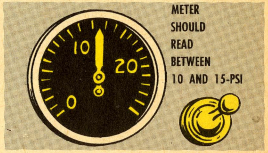

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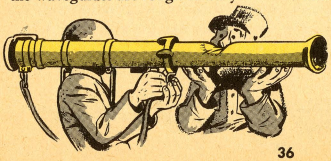

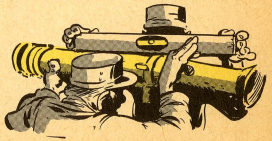

WATER'LL DO YOU DIRT

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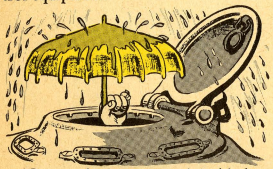
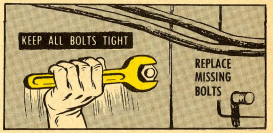


'Course, that's exaggeratin' a bit, but you just can't be too careful with those sealed-up mechanisms. Once a little moisture gets into 'em they can pick up more rust than an old maid's zipper.

Naturally, you don't use a water or steam hose on the inside of your tank. That's just cruising for corrosion. But if any low-down, connivin' water sneaks inside the turret, mop it up right away.



Keep all cover plates in place and the bolts tight. Replace any missing bolts, too.

Always use a clean, dry container when you pour oil into a mechanism. Any water that goes in with the oil will do you dirt—and it only takes a spoonful to do it.

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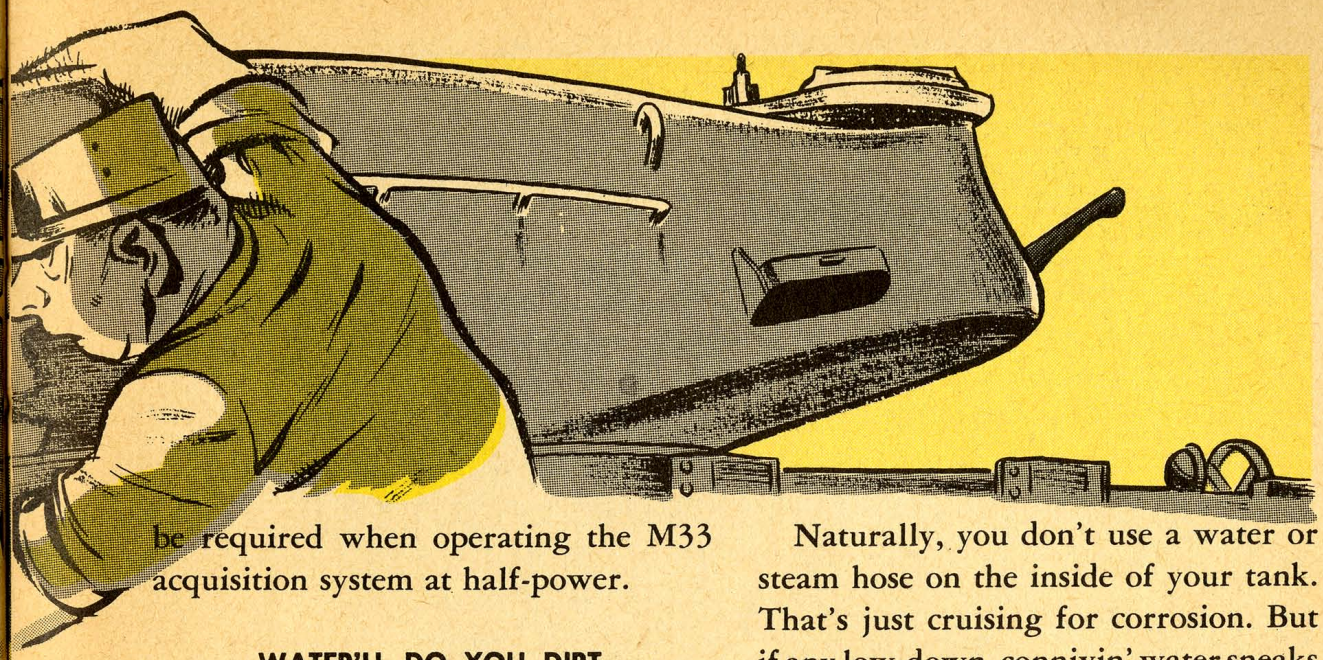

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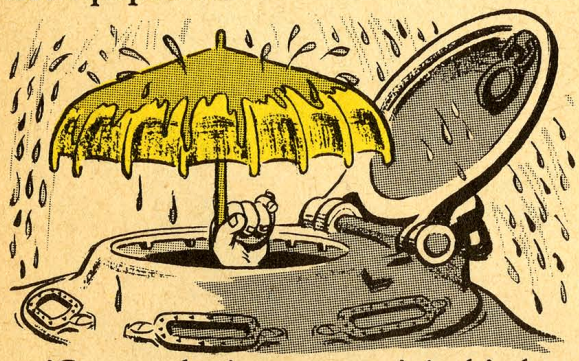

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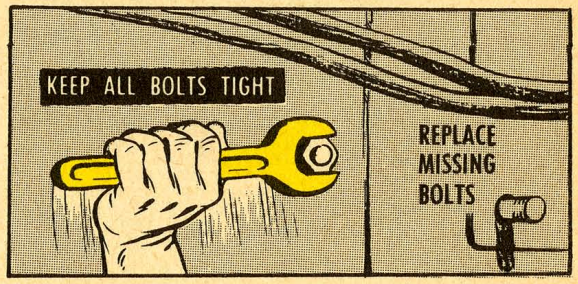

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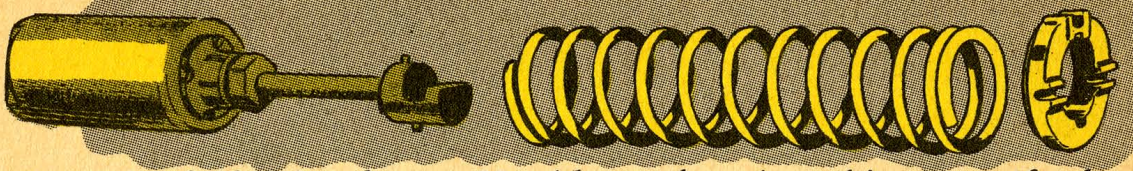
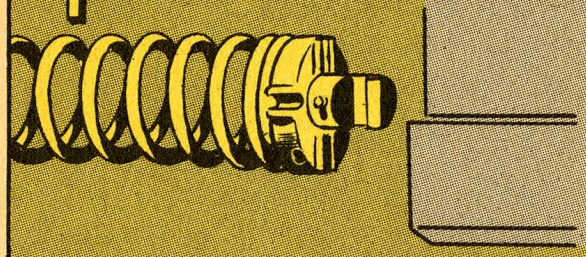
OIL BUFFER TUBE



So you've field stripped your .50-cal heavy barrel machine gun (fixed or flexible), and you're ready to put it back together. Of course you can put it together with no parts left over—but are all the parts just so?

It's not a silly question—take f'instance that oil buffer tube—put it in the oil buffer body like this and there's no guessin,' you'll know it's right:

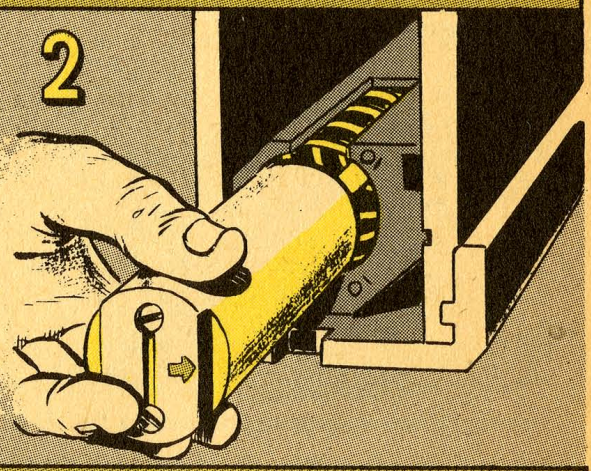
1



PLACE THE OIL BUFFER ASSEMBLY IN THE OIL BUFFER BODY GROUP.

MAKE SURE THE KEY ON THE SPRING GUIDE IS TO THE RIGHT TO FIT IN ITS SLOT IN THE RIGHT SIDE OF THE OIL BUFFER BODY. TURN THE OIL BUFFER TUBE UNTIL THE SCREWDRIVER SLOT (IN THE REAR OF THE TUBE) IS VERTICAL. THE ARROW POINTING TO THE RIGHT.

2



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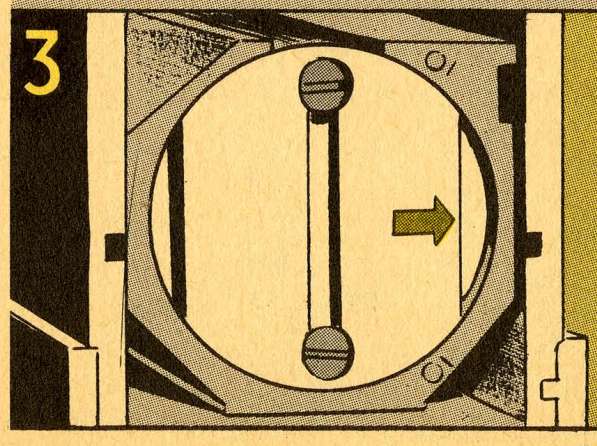
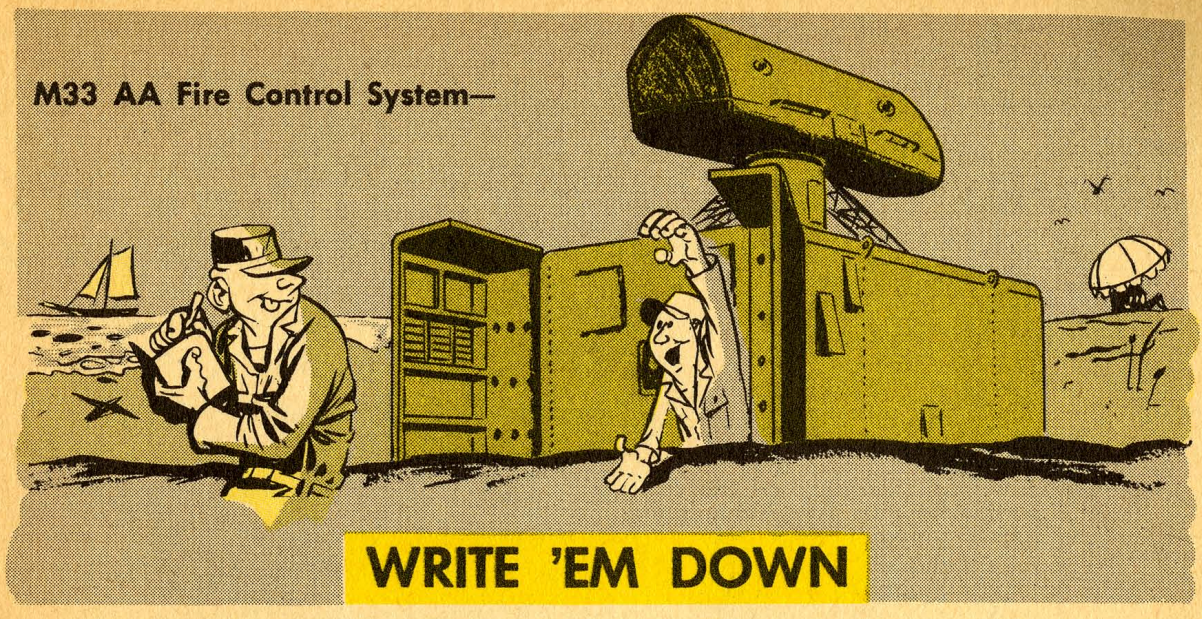


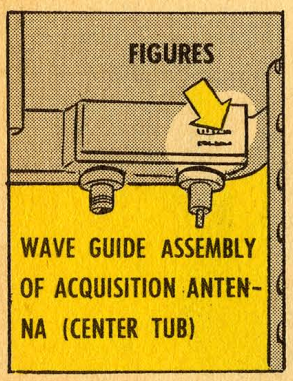
THE STUD ON THE TUBE LOCK WILL NOW ENGAGE THE SERRATION IN THE OIL BUFFER TUBE, TO KEEP THE TUBE FROM TURNING. PUSH THE OIL BUFFER ASSEMBLY FULLY FORWARD.

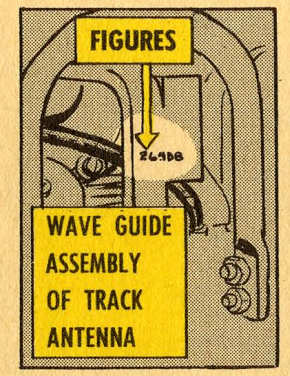


Figures are mighty important. 'Specially the decibel markings of the acquisition and track-radar directional-couplers.

The figures are different on each and every system. If you lose them you're in a fix and can only guess at what your system gives you.

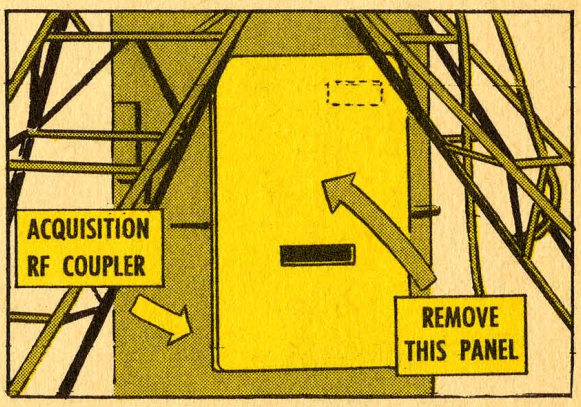
Those figures can wear off, or someone might accidentally paint over them. Be on the safe side. Mark them on the inside front cover of your system's record book.



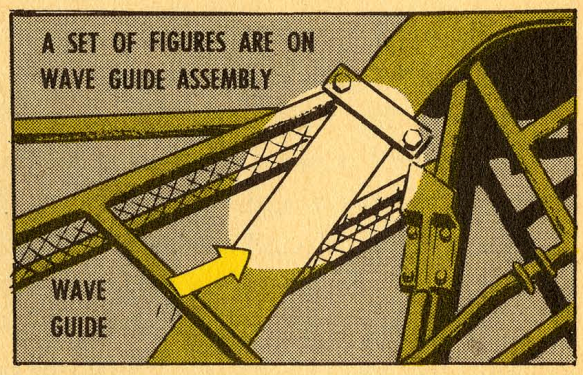


The one set of figures will be found on the waveguide-assembly in the center tub (RF coupler) of your acquisition-antenna. Take off the large panel of the tub and you'll get to it.

You'll find the other set of figures on



the waveguide-assembly of the track-antenna on top of the M242 van.



Remember, your system's record book will be the most permanent record for those figures—use it and be sure.

SUPPLY & DIRECTIVES

Your DD Form 110 HOW LONG

You dispatchers won't be clutterbugs if you keep the operational part (top half) of that form, together with your DA Form 9-75 (Daily Dispatch Record) for 60 days or 1000 miles, whichever comes first, like the SR says. That is—unless a report of accident is shown—then it'll be held in the accident suspense file until disposition is authorized by accident-reviewing officials.

As for the preventive maintenance services section (lower half)—after the motor sergeant has given it the once-over for indications of possible trouble and states in the remarks section any special attention to be given the vehicle at the next weekly or biweekly service, he then keeps it until the next weekly or biweekly service, after which it goes in file 13.

PAINT POOP

Paints and varnishes for Army troop use are now stocked by Engineer supply depots. SR 700-51-10 (30 Sept 54) gives the Corps of Engineers procurement and storage responsibility for these items. The SR also gives the low-down on requisitioning paint products.

It also tells how repairs and utilities, units, or research and development outfits can come by their paint supplies.

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VEHICLE AND EQUIPMENT OPERATIONAL RECORD

DATE	TYPE	REGISTRATION NO.	ADMINISTRATION NO.
30 June 1954	TRUCK, 2½ TON, M135	6249842	6

DISPATCHING ORGANIZATION: 63rd TANK BN.	BEFORE ~~DAILY~~ OPER.	DURING OPER.	AFTER OPER.	ACTION	TIME	MILES	TOTAL (Fuel gallons): 11 C.A.S. 5/16 T.W.W. / TOTAL (Oil quarts): 1 C.A.S.
1ST OPERATOR: Pfc. C.A. SMITH	✓	✓	✓	IN	0940	6525	REPORT TO: LT. F. JAY
OPERATOR'S SIGNATURE: Clifford A. Smith				OUT	0800	6489	DISPATCHER'S SIGNATURE: H. W. Lowell, Pvt.
				TOTAL		36	
2D OPERATOR				IN			REPORT TO
OPERATOR'S SIGNATURE				OUT			DISPATCHER'S SIGNATURE
				TOTAL			
3D OPERATOR				IN			REPORT TO
OPERATOR'S SIGNATURE				OUT			DISPATCHER'S SIGNATURE
				TOTAL			
4TH OPERATOR				IN			REPORT TO
OPERATOR'S SIGNATURE				OUT			DISPATCHER'S SIGNATURE
				TOTAL			

NOTE: Items checked by driver certify appropriate Maintenance Service has been performed. Signatures of the dispatcher, operator, and user certify that vehicle was dispatched and used for Official Government Business ONLY.

DD FORM 1 DEC 53 110 — EDITION OF 1 DEC 49 MAY BE USED. 16—69857-1

TEAR OFF PORTION

PREVENTIVE MAINTENANCE SERVICES

LEGEND: ✓—O. K. X—DEFECTIVE ~~△—WEEKLY SERVICE~~

DATE	TYPE	REGISTRATION NO.	UNIT NO.
30 June 1954	TRUCK, 2½ TON, M135	6249842	6

1. BEFORE OPERATION	1ST	2D	3D	4TH	2. DURING OPERATION	1ST	2D	3D	4TH	3. AFTER OPERATION	1ST	2D	3D	4TH
DAMAGE, PILFERAGE	✓				INSTRUMENTS	✓				LIGHTS AND REFLECTORS	✓			
LEAKS GENERAL	✓				BRAKES	✓				SAFETY DEVICES	✓			
FUEL, OIL, WATER	X				~~CLUTCH~~					BRAKES	✓			
ENGINE WARM-UP	✓				STEERING	✓				AIR TANKS (Drain)	✓			
INSTRUMENTS	✓				ENGINE OPERATION	✓				FUEL, OIL, WATER (Refill)	✓			
SAFETY DEVICES	✓				UNUSUAL NOISES	✓				~~DRIVE BELTS~~				
TOOLS AND EQUIPMENT	✓				TIRES	✓				~~BATTERY LEVEL~~				
PUBLICATIONS	✓				LEAKS	✓				~~ANTI-FREEZE~~				
TIRES	✓									*TIRES (Damage) (gage)	✓			
										*CLEAN (As required)	✓			
										TOOLS AND EQUIP.	✓			
										LUBRICATION	✓			

I CERTIFY THAT I HAVE PERFORMED THE MAINTENANCE REQUIRED IN PREVENTIVE MAINTENANCE SECTION

1ST OPERATOR: Clifford A. Smith	4TH OPERATOR
2D OPERATOR	INSPECTED BY: Charles W. Krug (mechanic)
3D OPERATOR	INSPECTED BY: Sgt. R. S. Boyd (section leader)

DETACHED FROM DD FORM 110, 1 DEC 53 — 16—69857-1

TO KEEP IT

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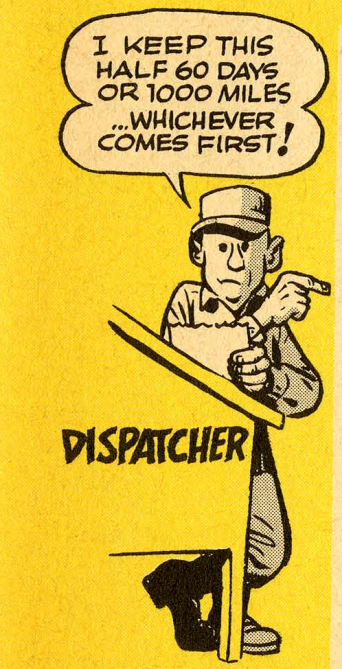

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30 June 1954	TRUCK, 2½ TON, M135	6249842	6

DISPATCHING ORGANIZATION: 63rd TANK BN.

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	BEFORE OPER.	DURING OPER.	AFTER OPER.	ACTION	TIME	MILES	
1ST OPERATOR: Pfc. C.A. SMITH	✓	✓	✓	IN	0940	6525	REPORT TO: LT. F. JAY
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OPERATOR'S SIGNATURE				OUT			DISPATCHER'S SIGNATURE
				TOTAL			
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DATE	TYPE	REGISTRATION NO.	UNIT NO.
30 June 1954	TRUCK, 2½ TON, M135	6249842	6

1. BEFORE OPERATION	OPERATOR 1ST	2D	3D	4TH	2. DURING OPERATION	OPERATOR 1ST	2D	3D	4TH	3. AFTER OPERATION	OPERATOR 1ST	2D	3D	4TH
DAMAGE, PILFERAGE	✓				INSTRUMENTS	✓				LIGHTS AND REFLECTORS	✓			
LEAKS GENERAL	✓				BRAKES	✓				SAFETY DEVICES	✓			
FUEL, OIL, WATER	X				~~CLUTCH~~					BRAKES	✓			
ENGINE WARM-UP	✓				STEERING	✓				AIR TANKS (Drain)	✓			
INSTRUMENTS	✓				ENGINE OPERATION	✓				FUEL, OIL, WATER (Refill)	✓			
SAFETY DEVICES	✓				UNUSUAL NOISES	✓				~~*DRIVE BELTS~~				
TOOLS AND EQUIPMENT	✓				TIRES	✓				~~*BATTERY LEVEL~~				
PUBLICATIONS	✓				LEAKS	✓				~~*ANTI-FREEZE~~				
TIRES	✓									*TIRES (Damage) (psig)	✓			
										*CLEAN (As required)	✓			
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										LUBRICATION	✓			

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DETACHED FROM DD FORM 110, 1 DEC 53 — 16—09857-1

WHO DOES IT?

Dear Sgt Dozer,

Electrical generators, such as the M15A1 and M30, are Engineer property used by AAA outfits. Who performs the various echelons of maintenance on these generators?

W. K.

Dear W. K.,

Been wonderin' why somebody hasn't asked that question sooner, 'cause the AAA sites provide a unique situation as far as maintenance of Engineer equipment is concerned.

The using organization performs all 1st and 2nd-echelon maintenance. Field maintenance shops designated by Army commanders perform 3rd and 4th-echelon maintenance. In some Army areas, the field maintenance responsibility for Engineer engine generators is delegated to Ordnance field maintenance shops. All other Engineer equipment requiring 3rd and 4th-echelon maintenance is sent to Engineer field maintenance shops.

Of course, when your engine generators require depot repair (or 5th-echelon maintenance) they are either replaced with a serviceable unit by the Corps of Engineers maintenance and supply system or sent to an Engineer depot maintenance shop for rebuild.

Sgt Dozer

CRANE CARRIER KEEPERS

Dear Sgt Dozer,

We're in bad need of LO's and TB's for the Thew Lorain crane carriers E6610 and E6620. When will they be out? Our publications cover the cranes, but not the carriers or the engines.

WOJG M. H.

Dear Mister M. H.,

They're in the mill. Soon's they're out you'll find 'em listed in the publications "Round Up" section in PS.

In the meantime check LO 5-1183 and LO 5-5167 (for Hercules engines JXLD, JXC AND JXD) . . . you'll find 'em helpful. The cranes use these Hercules engines.

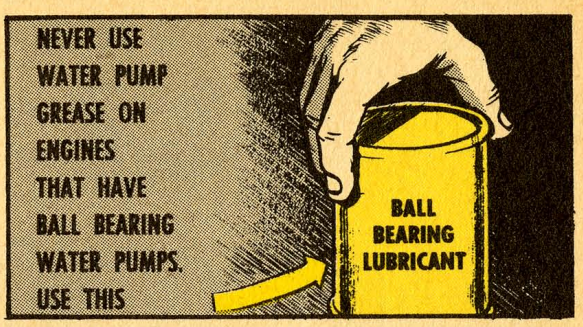
WATER PUMP MIX-UP

Hold the phone on LO's 5-5072 and 5-5166 for the Model M330 Continental Engine. They tell you to use water pump grease on the water-pump bearing, but 'tain't so.

You see, modern day Continental engines have ball bearing water pumps and those water pumps need nothing more than a good grade of ball bearing lubricant.

The mixup comes from the time when Continental engines had water pumps that used brass bushings and packing nuts, with the nuts on the outside. They sealed the water in by compressing the packing around the shaft with the nut applying pressure through a packing gland. This type bushing was lubed with a grease cup that used water pump grease—it improved when it came in contact with the water, keeping the packing gland water tight.

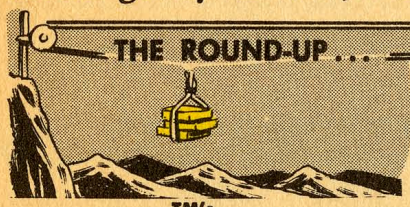
Nowadays, with the ball bearing water pumps, the seal's on the inside and is put together so the water is kept away from the bearings. If any water should get by the seal, it'll drain out before reaching the bearing. So, just remember, a good grade of ball bearing grease'll do the job.



Here's a complete list of all Continental engines that have the ball bearing water pumps:

N56, N62, Y69, Y91, Y112, F124, F140, F162, F186, F209, F218, F226, F244, M271, M290, M330, B371, B427, G157, H260, J382, K330, K363, T371, T427, U501, R513, R572, R602, S749, S820 and SD 802.

Make the change right now if you're still using water pump grease for those Continental engines. Water pump grease hardens when there's no water around . . . and that'd be the case on the modern water pump with the ball bearing supported shaft. When grease hardens, it's no good to make things slick.



TM's

5-8022 Boat, bridge erec, 19 ft (less eng), 5 Nov 54

5-9510 Crane-Shvl, trk-mtd, GED, Harnischfeger 255A-TC, 26 Nov 54

5-4075 Drill, pneu, 55 lb cls, Hardsocg mod D45-1, 23 Dec 54

5-2031 Pump, cent, Carter mod 4MWH-G, 5 Jan 55

TB's

5-5248-1 Engine, gasoline, Allis-Chalmers mod L-90, 3 Jan 55

5-1400-2 Crusher, roll type, Pioneer mod 54-VAE, 20 Dec 54

5-1400-4 Crusher, roll type, Pioneer mod 300-WAE, 20 Dec 54

5-1400-5 Power Unit, GED, Pioneer mod, 20 Dec 54

5-1400-6 Crusher, roll type, Pioneer mod 42-VAE, 21 Dec 54

5-1400-8 Pump, cent, Jaeger mod 6PHO, 20 Dec 54

5-5221-1 Engine, gasoline, Aero-Jet-Gen'l Grosley mod 8, 20 Dec 54

5-5247-1 Engine, gasoline, Allis-Chalmers mod B-15, 20 Dec 54

LO's

5-1086 Plow, trctr, sgle plain shave, Deere mod 11, 4 Jan 55

5-1246 Crusher, roll type, crwlr-mtd, Pioneer mod 54-VA, 17 Dec 54

5-2250 Pump, cent, Gorman-Rupp mod 34/F140, 4 Jan 55

5-9507-3 Crane-Shvl, trk-mtd, Bay City mod 180-T66, 10 Dec 54

5-9510-1 Crane-Shvl, trk-mtd, Harnischfeger mod 255-A-TC, 10 Dec 54

5-9510-2 Crane-Shvl, trk-mtd, Harnischfeger mod 255-A-TC, 13 Dec 54

MWO's

5053-2 Gen Set, Reiner mod GGC-30AC, 7 Dec 54

5081-2 Gen Set, Kohler mod 5 MH81, 10 Nov 54

9036-1 Tank, water, Columbia Stl Tank Co., 5 Jan 55

1154-1 Kettle, asph repair, Littleford mod 84-HD-3, 14 Jan 55

5193-1 Engine, gasoline, Wisconsin mod U Series, 20 Jan 55

5194-1 Engine, gasoline, Wisconsin mods AHH, AHHD and AGH, 21 Jan 55

5197-1 Engine, gasoline, Wisconsin mods AE and AEH, 20 Jan 55

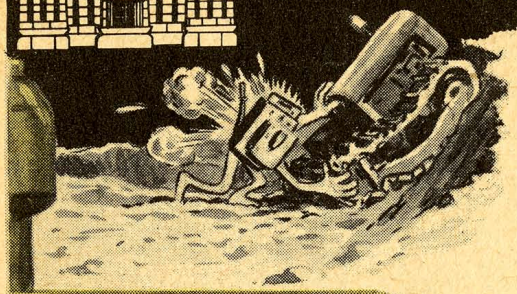
5232-1 Engine, gasoline, Briggs & Stratton mod N Series, 21 Jan 55

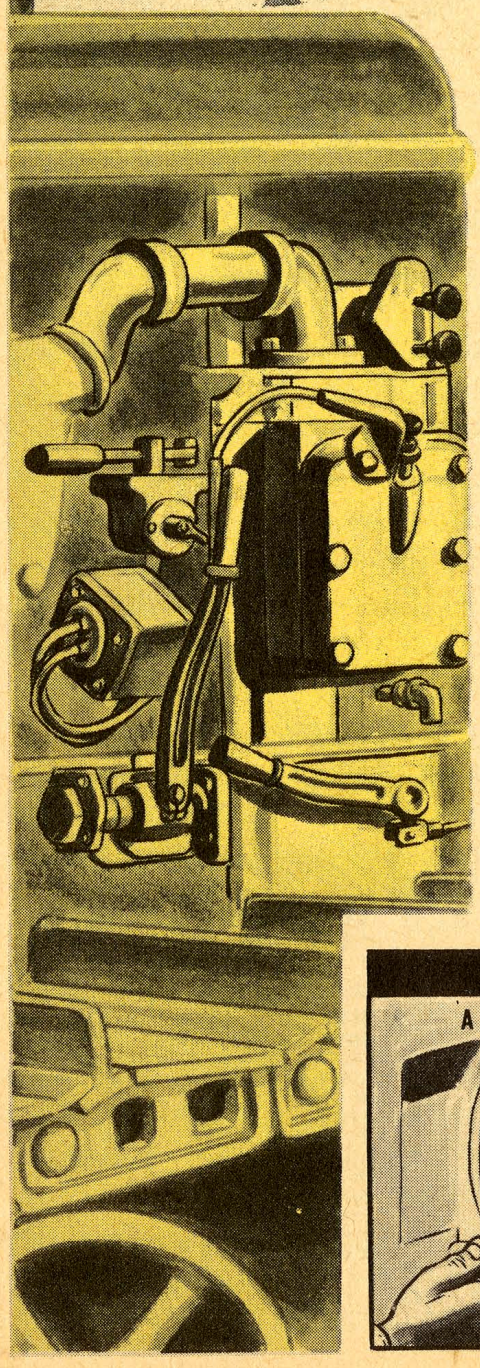
ENG 7&8's

1256 Pump, cent, Pioneer Engineering Wks mod, 10 Dec 54

To keep a diesel snortin'
take care when it's startin'—

DIESEL



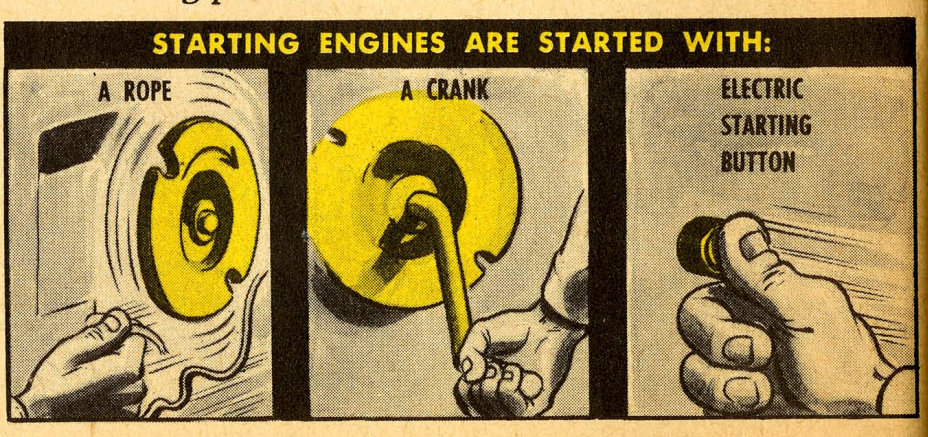


The starting-engine needs kind handling each and every time you get set to start your diesel equipment. When you forget the right starting-engine starting-procedure, you'll discover your thundering diesel will be laid low with ruptured innards.

Here's the low-down on starting and stopping a starting-engine. It's especially for you guys who work Caterpillar equipment like Nos. 12, 112, 212 motor graders and the D-2, D-4, D-6, D-7 and D-8 tractors.

First and foremost, you gotta always remember that the two-cylinder, four-stroke-cycle, gasoline engine that sets these diesels in motion is a complete and independent unit in itself. It has its own complete set of maintenance and operation rules . . . you'll find 'em under the starting-engine sections in your TM or manufacturer's manual.

Starting-engines are started either with a rope or a crank or by pushing an electric starter-button. Either way—it's murder to try to set her spinning without first making sure that all diesel-engine controls, tractor-controls and starting-engine controls are in the right starting positions.



To keep a diesel snortin' take care when it's startin'—

DIESEL STARTING-ENGINE STARTING

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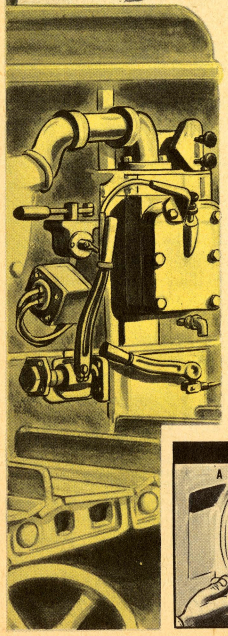
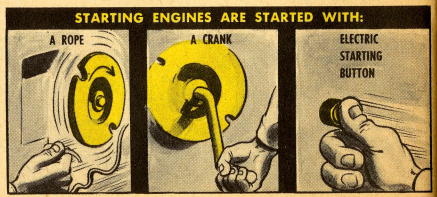
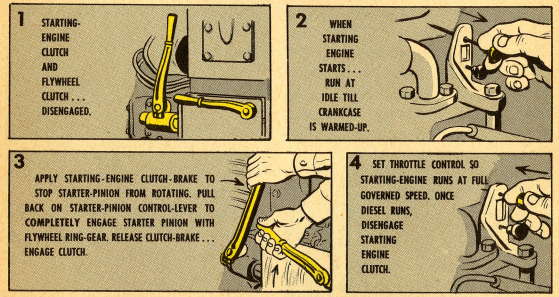




Full details for the right starting position for each control, as well as the right word on oil-checking, should be mounted tight to the equipment where you can't miss it. You can get all the dope out of the maintenance manual.

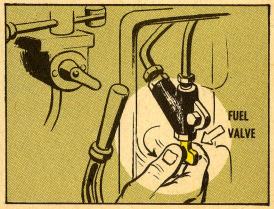
Pay heed to these (to protect the starter pinion and the flywheel ring-gear from serious damage) anytime you're set to run the starting-engine:



And any time the starting-engine's cranked the diesel nice and hot and the diesel still refuses to catch . . . stop and go over everything to see if all's set right to start.

When you're ready to stop the starting-engine, pull out the throttle-control so the engine will idle at low speed. Then close off the fuel-valve at the carburetor. This drains the carburetor, makes the float-valve and bearing last longer and stops crankcase dilution.

When the starting-engine heaves its last chug, turn the ignition switch **off.**



STARTING-ENGINE STARTING

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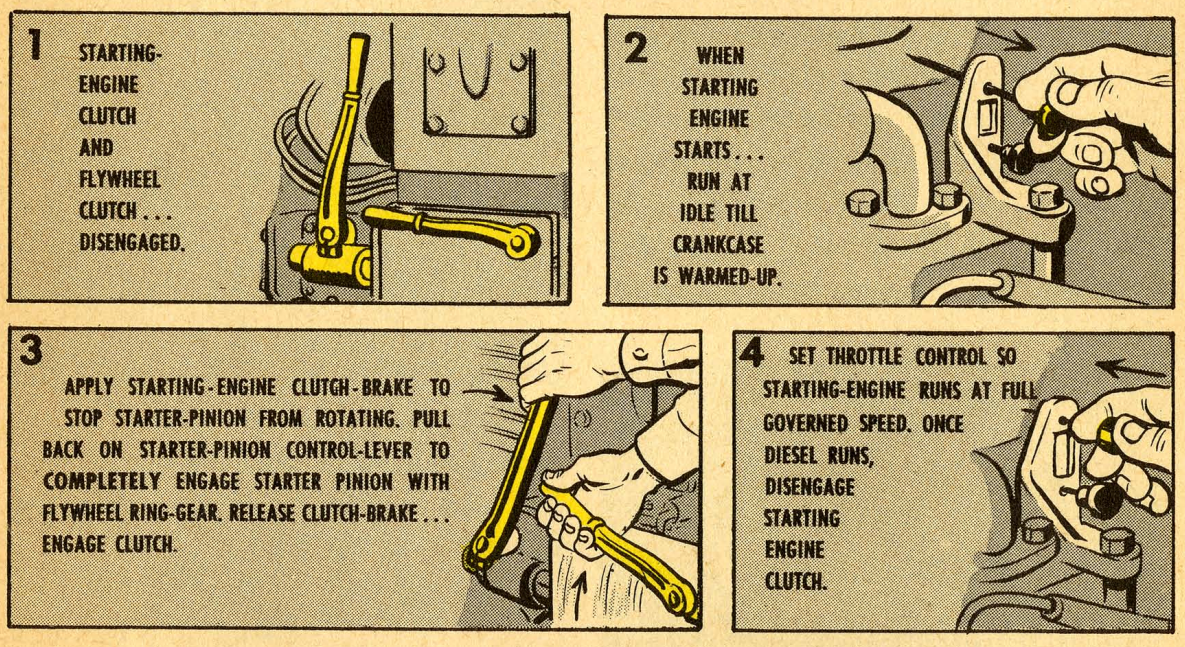

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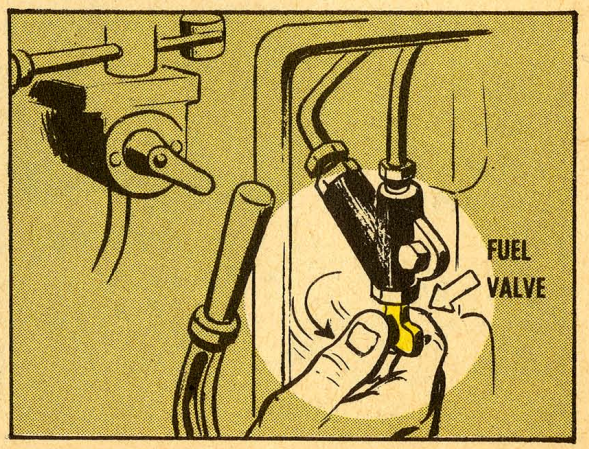
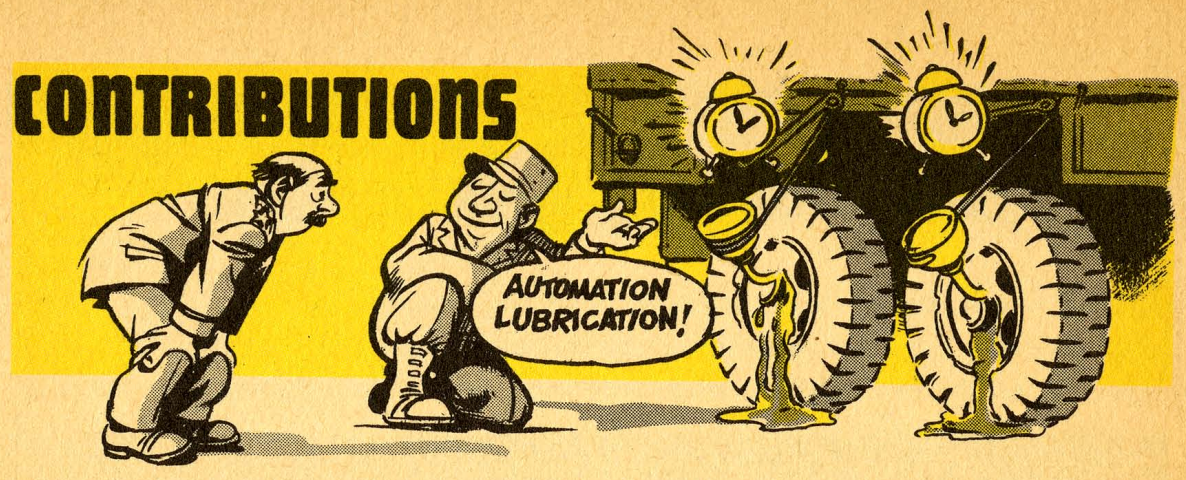
When you're ready to stop the starting-engine, pull out the throttle-control so the engine will idle at low speed. Then close off the fuel-valve at the carburetor. This drains the carburetor, makes the float-valve and bearing last longer and stops crankcase dilution.

When the starting-engine heaves its last chug, turn the ignition switch **off.**



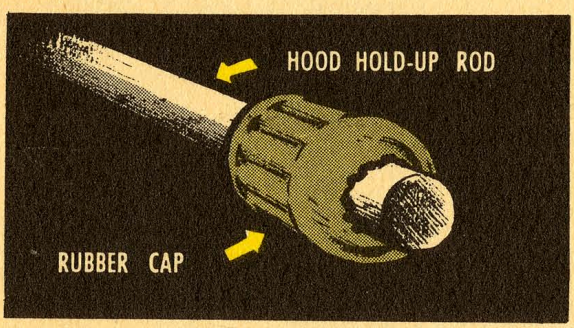
CONTRIBUTIONS



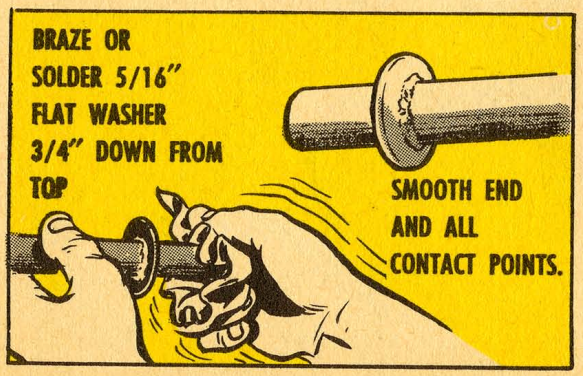
ROD'S RUBBER HELMET

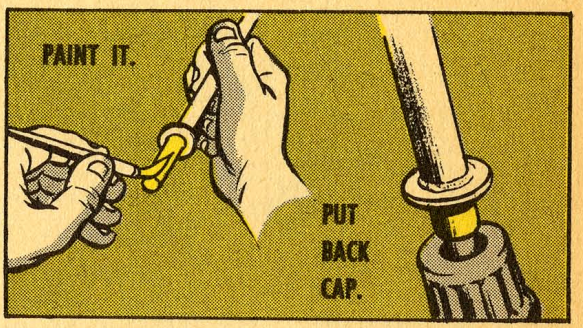
Dear Editor,

Look at the hood-hold-up rod's rubber cap on some M37, 3/4-ton trucks. Notice how many have a hole punched right through. The hood coming down on the rod did this, and it makes the cap worthless. And without the rubber bumper, the rod knocks dents in the hood.



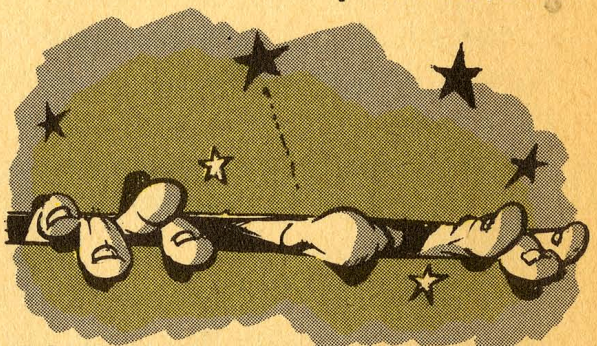
Here's how to save the cap and the hood. Take off the rod and braze or solder a 5/16-in flat-washer 3/4-in down from its top. Smooth down the rod's end and all contact points with emery cloth. Finally, paint it, and after it's dry, put back the cap and reinstall the rod.





Now the cap has the washer as well as the rod to sit on. And there's no rough edges on the rod's tip to go poking and cutting where it oughtn't.

Sgt Fred O. Hunt
Camp Chaffee, Ark.

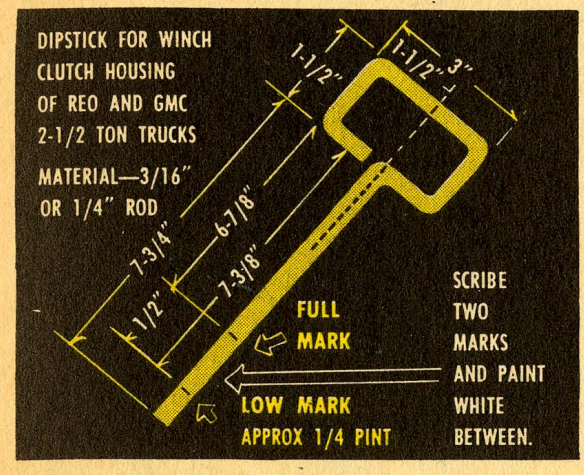


(Ed Note—Wouldn't it be easier to just replace the rubber bumper? And cheaper, too? The little buggers don't cost much. But best of all, take it easy resting the hood on the rod.)

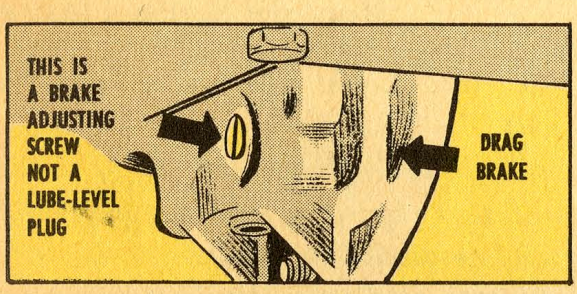
WINCH DIPSTICK

Dear Editor,

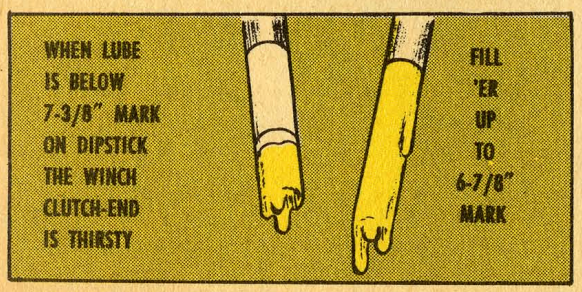
Here's a quick-made metal dipstick for checking the lube level at the clutch-end on the M34 and M135 trucks' winches. This gadget has stopped green

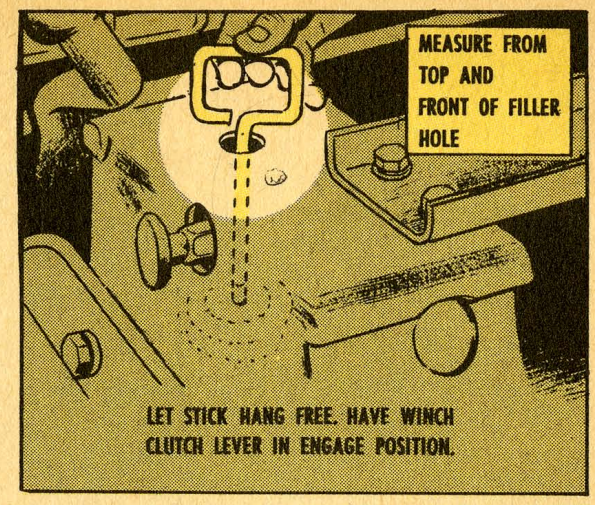


drivers from wrecking winches by unscrewing the drag-brake adjusting screw when trying to use it for a lube-level plug. And from wasting oil by filling the housing up to the top.



When the lube gets below the 7-3/8-in mark on our dipstick we know the winch clutch-end is thirsty and wants another swig—so we fill 'er up, to the

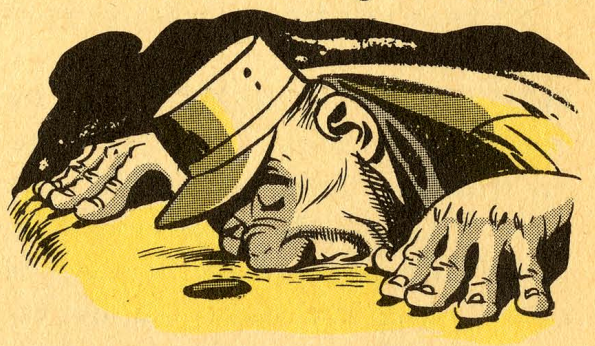




6-7/8-in mark. It's a handy gadget to have around a motor pool.

Gotta remember you're measuring from the **Top** and **Front** of the filler hole. And—to get at it—the winch clutch lever's gotta be in the **engaged** position.

Cpl Harold Brooks
Aberdeen Proving Ground, Md.

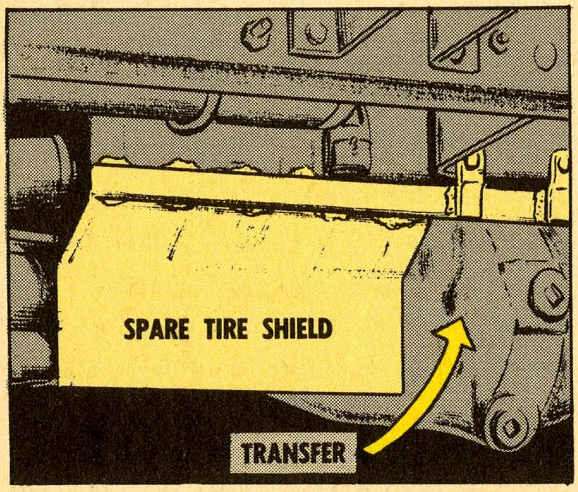


(Ed Note—Pretty handy. That sure beats the hit-and-miss method of looking deep into a dark hole to see if you've got something black. And no sense putting in almost three quarts of oil when the LO calls for only one pint. By all means, keep away from that adjusting screw. If it's not just right, the tension in the drag brake'll be fouled up, but good. There'll be nothing to stop the winch drum from overrunning the cable when it's pulled.)

SPARE-TIRE GREASE SHIELD

Dear Editor,

We received a bunch of GMC M211's and M135's and were told to make up the spare-tire grease shields that are covered in TB 9-819A-10 and stick them on.

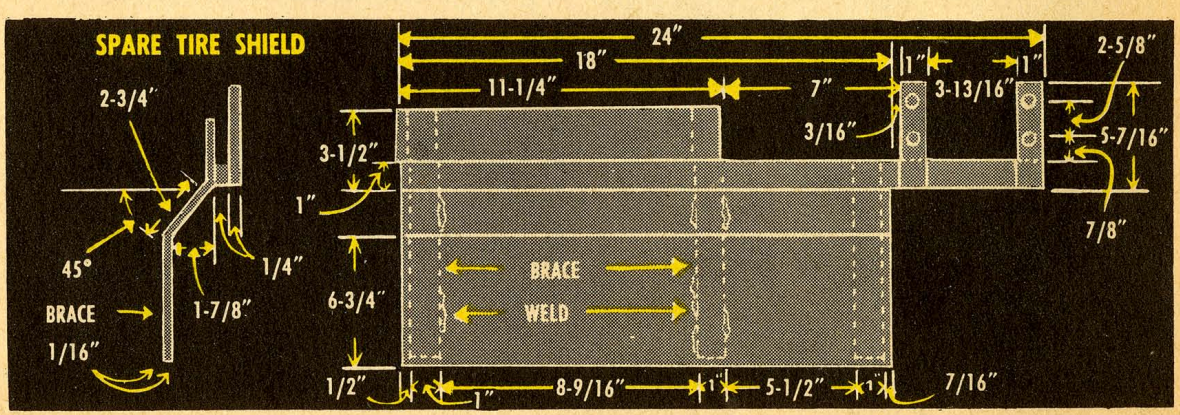


We made up a few and when we tried to put them on they worked on the M135's but not on the M211's. So, we redesigned the shield so we could comply with the TB. Our design will work on the M135 and the rest of the GMC's, and is much easier to make. We used the same 16-gage steel and 1/4-in flat bar stock the TB says to use. The whole shebang only cost 64 cents and about an hour to make.

With this type shield, we didn't have to drill holes in the frame to put it on. We used the same holes that are used to bolt the transfer to the frame. All we had to do was get four new bolts 1/4 inch longer than those used on the transfer. This took care of the 1/4 inch thickness of the flat bar stock, and we had it.

WO Fred Harbaugh
Maryland National Guard

(Ed Note—Looks like you've come up with one good way to whip the problem. However, there's an MWO in the mill that's based on a similar idea—and will rescind TB 9-819A-10. Outfits using those GMC's should keep an eye peeled for it.)



Connie Rodd's BRIEFS

Save y'r crystals

When the 1N23B crystals in the tracking antenna of your 75-mm ack-ack poop out on 'ya, don't throw 'em away. Ordnance may be able to salvage some by adjusting the screw in the large end. Don't try it yourself, tho. Save 'em for Ordnance.

Ribbons and bows

Bows and tarp-rods have less chance of chaffing through the canvas if you emery 'em down real smooth and repaint them. It may not stop the wearing-out forever-more, but there'll be less tear to the wear. And no shredding to ribbons.

Gnawed Needle

Your M38's bell crank will last lots longer if it's kept well lubricated, 'specially if you're plowing through muddy operations. Also make sure it's well lubricated as soon as possible after the mud bath. Mud can gnaw it to the breaking point. You may go far without a bell crank—but not in the right direction.

No place for feet

The grip assembly on the elevating handwheels of your M41A1 tanks may look like a foot-rest, but it's got more vital things to do. It won't take much bangin' around, so keep the big clod-hoppers off it. And you'll have no grip gripes.

Plug it easy

When you're replacing the filler plug in the oil reservoir of your M33 acq antenna for goshsake don't overuse the wrench. Too many guys have been wringing the neck plumb off this tank. Put light pressure on the wrench to bring the plug up **snug**—stop—that's just enough.

No cracks, please

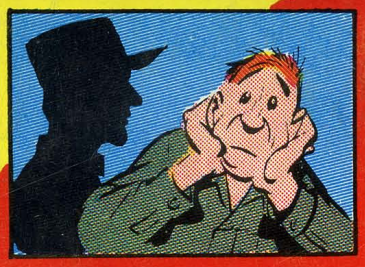
The next time you pick up your carbine, take a look at the rear corner of the locking lug recess of the receiver. If there's a crack there, trot it right in for exchange. Carbines with these cracks are **not** to be fired.

Turn off the juice

When not in use turn off the juice. 'Specially the switch on the M1A1 amplifier of your 90 mm M2A1 ack-ack gun. Just to remind you, paint or stencil "Turn off when not in use" on the amplifier near the switch. It may save you a motor.

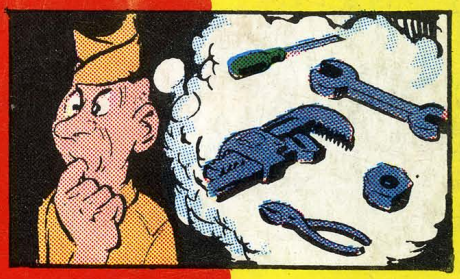
Bounce the birds back

The unserviceable birds, that is. All of you in the missile program know that the heat is on. You can help yourself get off the hook if you shoot your unserviceable components back right away quick. Don't wait, and don't hang on to any parts for training or any other reason. These parts have to be rebuilt, and fast, and sent out to put another bird back on the air.



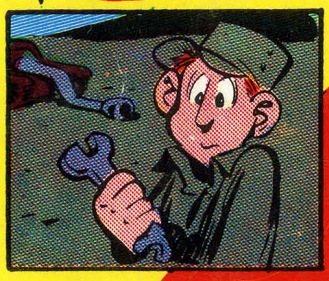
WHO
MAINTAINS ARMY EQUIPMENT?

WHAT
DOES HE DO?



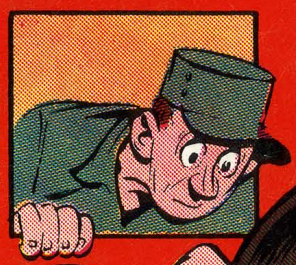
WHERE
ON THE EQUIPMENT OR WHERE (CLIMATE OR CONDITIONS) DOES HE DO IT?

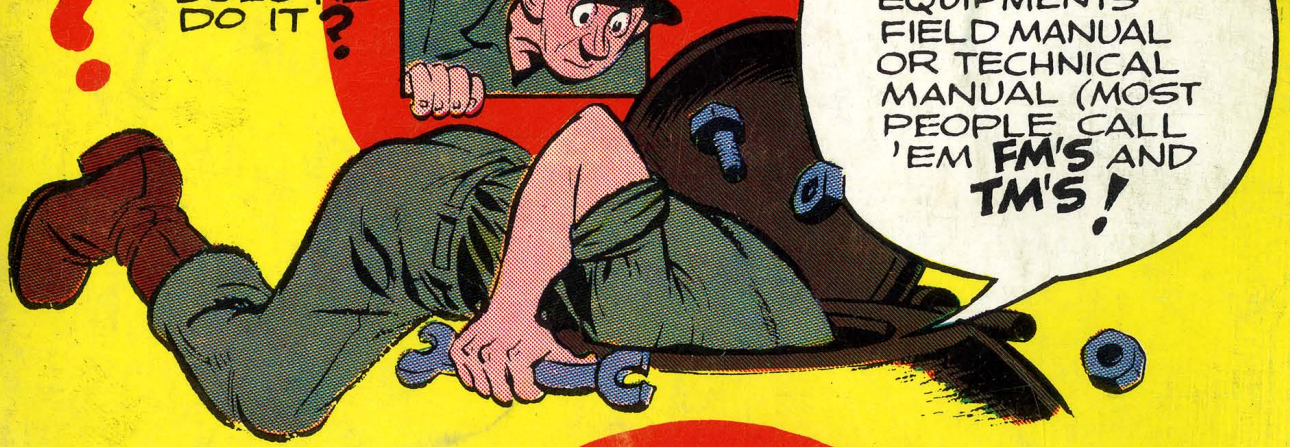
WHEN
AT WHAT INTERVALS?



WHY?

HOW
DOES HE DO IT?





KNOW YOUR FM & TM

Any Questions—Write Sgt Half-Mast